Index Vol 10A
Page 21

IV-2
301

569

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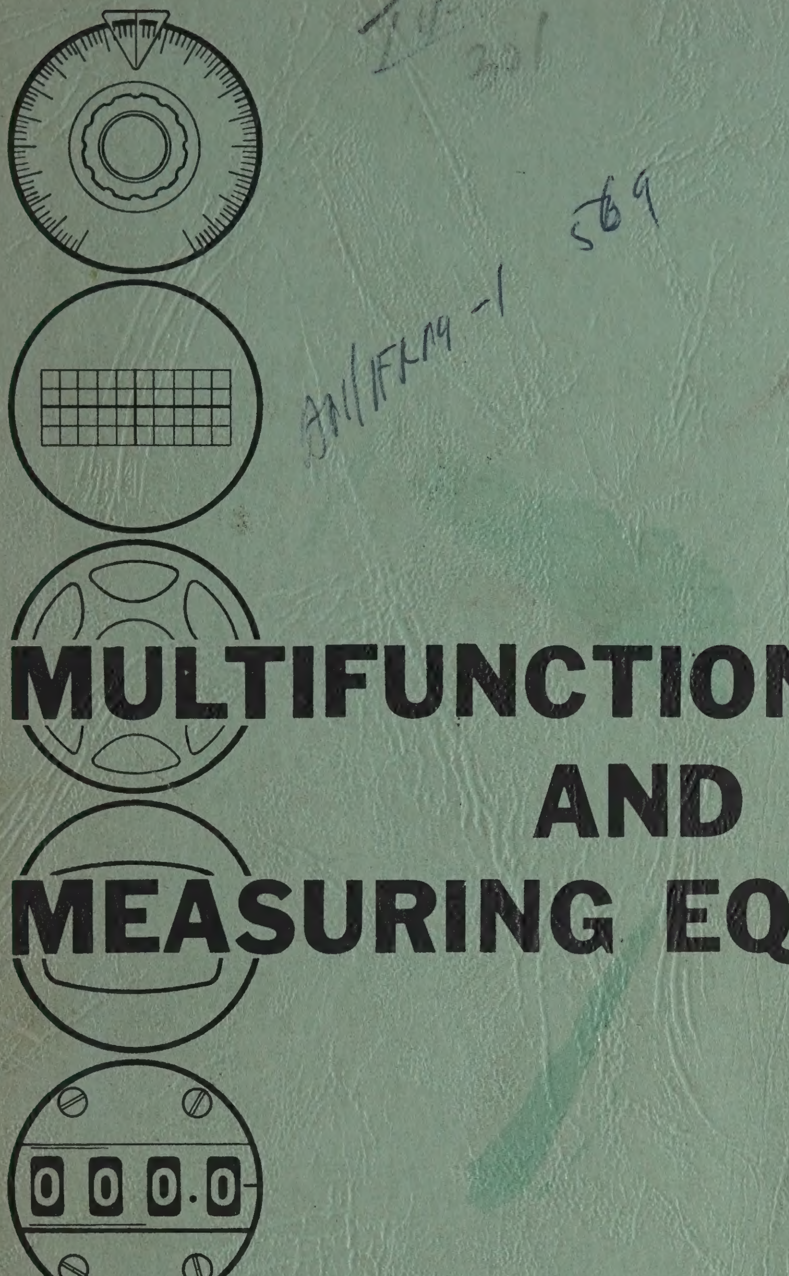
Electrical & Electronic

TEST EQUIPMENT DATA HANDBOOK

VOLUME 10 B



MULTIFUNCTIONAL TEST AND MEASURING EQUIPMENT

FREDERICK RESEARCH CORPORATION

FRC

ELECTRICAL & ELECTRONIC

TEST EQUIPMENT DATA HANDBOOK

VOLUME 10 B

MULTIFUNCTIONAL TEST AND MEASURING EQUIPMENT

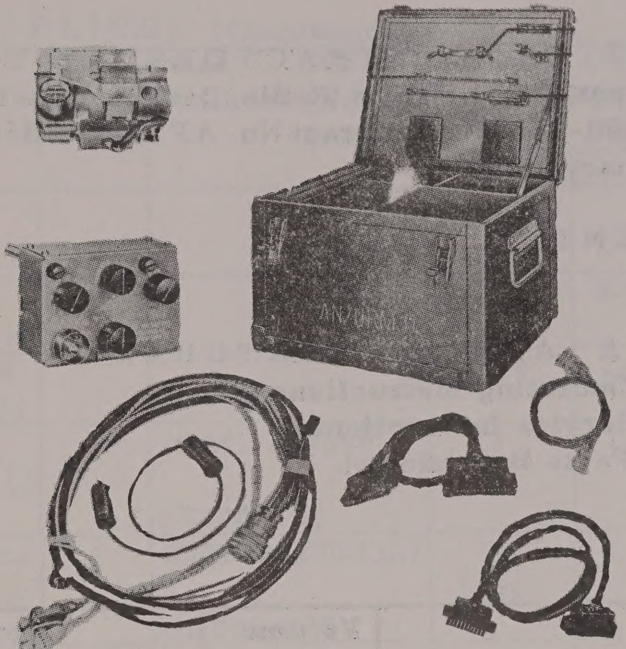
FREDERICK RESEARCH CORPORATION
2601 UNIVERSITY BOULEVARD, WEST
WHEATON, MARYLAND

NOTE

The complete Table of Contents and Index for Volume 10 is located in Volume 10, Part A. This arrangement provides a single source for location of all Multifunction Test and Measuring Equipment descriptions.

10.2 COMPONENT TEST SETS

TEST KIT AN/URM-11



FUNCTIONAL DESCRIPTION:

A portable, special purpose kit, used to allow normal operation of various components of a radio set when they are removed from the main chassis for purposes of component replacement or alignment operations. It is used in organizational, field, and depot maintenance.

RELATIONSHIP TO OTHER EQUIPMENT:

This kit is used in testing Radio Sets AN/ARC-33 and AN/FRC-18.

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: Five special purpose cable assemblies are used to connect the chassis of the receiver-transmitter into the main frame while those chassis are removed from the main frame for testing. The monitor simulator is used in testing relay and reactance-tube circuits to simulate monitor chassis frequency-control actions. The blower is used to keep type JAN-2C39A vacuum tubes cool when

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.	Standard		
STOCK NOS.	7CAC-725215		3F3945-11
PROCUREM'T INFO.: USAF Exhibit MCREE-551			
PROCUREM'T COG.: USAF		DESIGN COG.: USAF, C&N	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.2	
- Electronics Test Equipment -			AN/URM-11

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U.S.A.

ELECTROMECHANICAL DESCRIPTION: (Continued)
the radio set is operated while removed from the case for repairs.
Power Supply: None.

MANUFACTURERS' OR CONTRACTORS' DATA:
Bendix Aviation Corporation, Bendix Radio Division, Baltimore 4, Maryland; Bendix Dwg. No. OR200400-1; USAF Contract No. AF 33(038)-5652; Approximate Cost per Unit, $280.00. January 1952

TUBE COMPLEMENT:
None.

REFERENCE DATA AND LITERATURE:
TO 16-30URM11-1 (Operating Instructions).
TO 16-30URM11-2 (Service Instructions).
TO 16-30URM11-4 (Parts Breakdown).

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
1	Test Kit AN/URM-11 (Export Packed - Waterproof Container)	2.69	13-3/4	20-1/2	16-1/2	60

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock (USAF) Numbers (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Test Kit AN/URM-11 Including:	Aluminum	7CAC-725215 3F3945-11				
1	Monitor Simulator TS-692/URM-11		7CAC-274364 3F4325-692	3-1/2	4-4/5	4-4/5	1.203
1	Case CY-776/URM-11	Aluminum	7CAC-176573-47 2Z1891-776	10-3/5	15	13-1/2	17.000
1	Blower Unit MX-215/APG			3-1/5	4-1/2	3-3/4	2.030

(Continued)

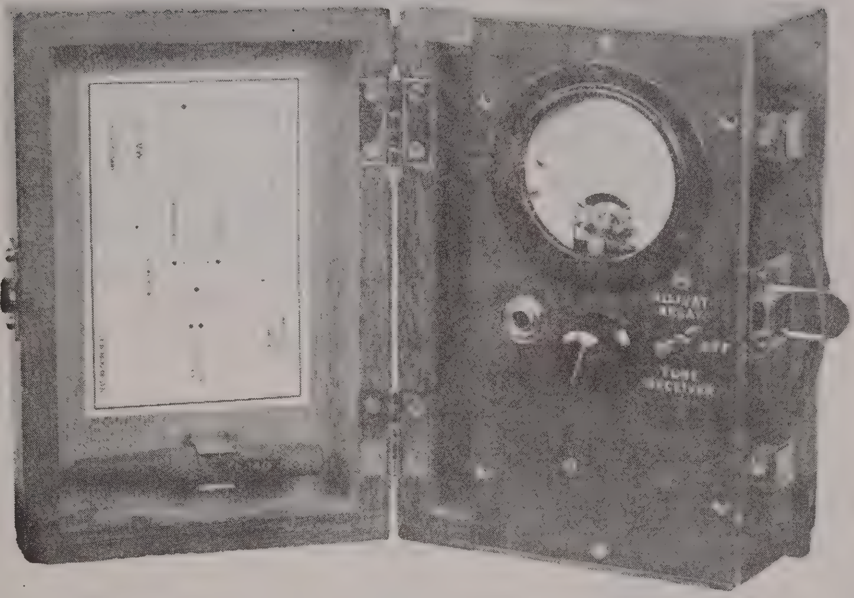
TEST KIT AN/URM-11

EQUIPMENT SUPPLIED: (Continued)

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Over-all Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Bracket MT-725/URM-11			2-1/8	2	2-1/4	0.250
1	Wrench TL-593/URM-11			1	9-9/50	1	0.109
1	Alignment Tool TL-595/URM-11			1/4	7-3/4	1/4	0.015
1	Hand Crank MX-1033/URM-11		7CAC-227650 2Z3407.32	1	1-1/2	1/3	0.030
1	Special Purpose Cable Assembly CX-1291/U		7CCC-170270-1327 3E6000-1291	54 long			2.000
1	Special Purpose Cable Assembly CX-1292/U		7CAC-170270-13645 3E6000-1292.1	54 long			0.500
1	Special Purpose Cable Assembly CX-1293/U		7CAC-170270-1328 3E6000-1293	54 long			1.750
1	Special Purpose Cable Assembly CX-1294/U		7CAC-170270-1329 3E6000-1294	144 long	3/4 dia.		2.500
1	Special Purpose Cable Assembly CX-1295/U		7CAC-170270-134 3E6000-1295.1	72 long	3/4 dia.		2.000
1	Tuning Wand MX-173/ARM-1		7CAC-857300 3F3989-173	1-1/8	6	1/8	0.015
1	Set Instruction Books						0.188
						Total:	29.590

TEST INDICATOR BE-67
(TEST SET, RELAY BE-67)

This research was supported by the USAF under Contract AF 33(038)12897 and monitored by the Wright Air Development Center, ARDC - Carl L. Frederick and Associates, Bethesda, Maryland - Multilithed in U.S.A.



FUNCTIONAL DESCRIPTION:

A portable, self-contained milliammeter designed for adjusting and tuning marker beacon receivers. It is used as an output meter as well as a source of direct current for proper relay adjustment of the equipment under test.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Power Supply: Two 4.5 volt batteries (BA-31).
Meter Scale: 0 to 1 milliampere direct current.

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.	Standard		Standard
STOCK NOS.	7CAC-801319-456		3F3967
PROCUREM'T INFO.:	USAF Spec. No. 71-856		
PROCUREM'T COG.:	USAF	**DESIGN COG.:**	USAF, C&N
F.I.I.N.:		FUNCTIONAL CLASS: 10.2	

TEST INDICATOR BE-67
(TEST SET, RELAY BE-67)

MANUFACTURERS' OR CONTRACTORS' DATA:

Packard & Bell Company, 3443 Wilshire Boulevard, Los Angeles, California, Contract No. 4027-45SE, 2/5/45, Approximate Cost, $33.00; Contract No. 4099-45CN, 4/27/45, Approximate Cost, $32.00.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO-16-55-224 (Spare Parts List).
AN 16-40BC376-2 (Maintenance Instructions).

EQUIPMENT SUPPLIED:

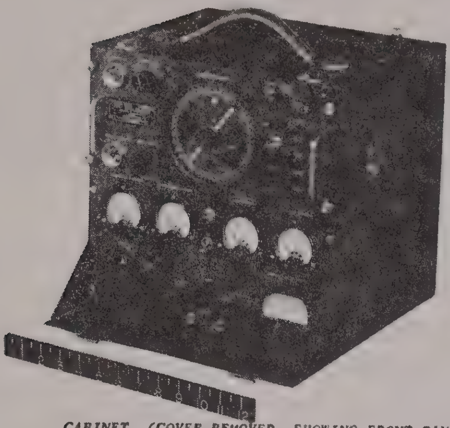
Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Over-all Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Test Indicator BE-67 (Complete)	Wood	7CAC-801319-456 3F3967	7-7/8	5-15/16	5-1/8	4.5
1	Cord CD-316-A		1600-321112000 3E1316A-5	36 long			

SHIPPING DATA:

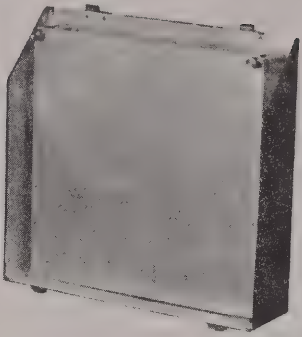
No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Over-all Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
1	Test Indicator, BE-67, with accessories. (Water resistant carton.)	0.51	11	10	8	7

TEST SET I-100-A
(TEST SET, RADIO I-100-A)

This research was supported by the USAF under Contract AF 33(038)12897 and monitored by the Wright Air Development Center, ARDC - Carl L. Frederick and Associates, Bethesda, Maryland - Multilithed in U.S.A.



CABINET. (COVER REMOVED, SHOWING FRONT PANELS OF TEST UNITS BC-713-A AND BC-714-A)



FRONT COVER

CORD CD-552-A

CORD CD-548-A

CORD CD-549-A

CORD CD-550-A

CORD CD-551-A

TEST PROD

TEST PROD

FUNCTIONAL DESCRIPTION:

A portable, self-contained test set designed to provide a rapid, reliable means of checking loop-orienting circuits of Radio Compass Units BC-433-G and R-5/ARN-7 and for checking the loop motor, autosyn, compensator and indicators or Radio Compasses SCR-269-G and AN/ARN-7. It tests components by means of substitution of various parts and by taking voltage and current measurements of the components under test in actual operation.

RELATIONSHIP TO OTHER EQUIPMENT:

Test Sets I-100-A and I-100-B are interchangeable, both electrically and physically. The resistors and capacitors of Test Set I-100-B are in accordance with JAN specifications. Test Set I-100-B also employs hermetically sealed meters.

ELECTROMECHANICAL DESCRIPTION:

Power Supply: 115 volts, 400 cycles per second, 90 to 115 watts.

Vacuum-Tube Voltmeter Ranges:

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.	Limited Standard		Not Classified
STOCK NOS.	7CAC-801319-2634	ASO-R16-AYS-I-100-A	3F4100A
PROCUREM'T INFO.:	USAF Spec. No. 71-1142		
PROCUREM'T COG.:	USAF	DESIGN COG.:	USAF, C&N
F.I.I.N.:		FUNCTIONAL CLASS:	10.2
	- Electronics Test Equipment -		I-100-A

TEST SET I-100-A
(TEST SET, RADIO I-100-A)

ELECTROMECHANICAL DESCRIPTION: (Continued)
Alternating Volts: 0 to 2.5, 10, 50, and 250 volts.
Direct Volts: 0 to 10, 50, and 250 volts.
Milliammeter Ranges:
Alternating Current: 0 to 250, 500, and 750 milliamperes.
Direct Current: 0 to 500 milliamperes.

MANUFACTURERS' OR CONTRACTORS' DATA:

Airadio, Incorporated, Stamford, Connecticut; Contract No. W33-042-SC-138.

Bendix Radio Division, Baltimore, Maryland, Contract No. 10986-43, 5/3/44, Approximate Cost per Equipment, $622.00.

Bendix Aviation Corporation, Baltimore, Maryland, Contract No. 159-44, 3/29/44, Approximate Cost per Equipment, $623.00.

TUBE COMPLEMENT:

2 JAN-5Z4, 1 JAN-6B8, 1 JAN-6F6, 1 JAN-6H6, 1 JAN-6J5, 2 JAN-0D3/VR150, 2 JAN-2050 or 2051.

REFERENCE DATA AND LITERATURE:
TO 16-40I100-3 (Maintenance Instructions).
TO 16-40I100-21 (Modification).
TO 16-55-24 (Spare Parts List).

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Over-all Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
1	Test Set, I-100-A, with accessories. (Shelf package, water resistant carton).	3.55	19	17	19	55.0

TEST SET I-100-A
(TEST SET, RADIO I-100-A)

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Over-all Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Test Set I-100-A (Complete)	Aluminum	7CAC-801319-2634 3F4100	14.4	12.8	14.5	46.0
1	Test Unit BC-713-A	Aluminum	7CAC-801319-2593 3F4453	12-5/8	6-3/4	11-1/4	13.0
1	Line Cord 654						
2	Test Lead		7CAC-468919-75 3EK4500-9				
1	Test Unit BC-714-A	Aluminum	7CAC-801319-2562 3F4454	12-5/8	5-7/8	10-3/16	18.5
1	Cord CD-548-A		7CAC-170270-1393 3E1548A	120 long	1/2 dia.		1.8
1	Cord CD-549-A		7CAC-170270-1387 3E1549A	120 long	1/2 dia.		1.8
1	Cord CD-550-A		7CAC-170270-1389 3E1550A	120 long	1/2 dia.		1.6
1	Cord CD-551-A		7CAC-170270-1394 3E1551A	36 long	1/2 dia.		0.6
1	Cord CD-552-A		7CAC-170270-1395 3E1552A	36 long	1/2 dia.		0.6
1	Cabinet CY-638/U	Aluminum		12-3/4	12-3/8	13-7/8	10.3
1	Set Spare Tubes						
1	Instruction Book						

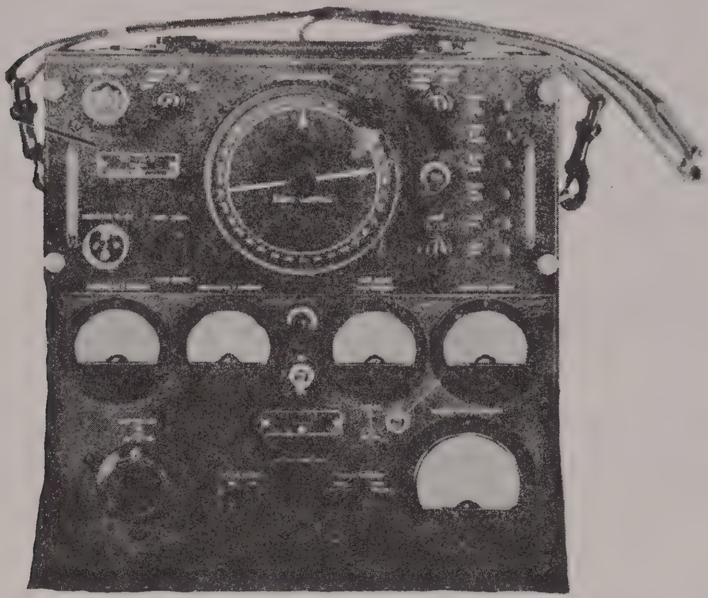
TEST SET I-100-A
(TEST SET, RADIO I-100-A)

EQUIPMENT SUPPLIED: (Continued)

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Over-all Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Package of Maintenance Parts						
1	Strap ST-19-A		3300-296493000 2Z9019A	65 long	2 wide		
2	Setscrew Wrenches No. 6		7900-859441 6R55230				

TEST SET I-100-B
(TEST SET, RADIO I-100-B)

This research was supported by the USAF under Contract AF 33(038)12897 and monitored by the Wright Air Development Center, ARDC - Carl L. Frederick and Associates, Bethesda, Maryland - Multilithed in U.S.A.



FUNCTIONAL DESCRIPTION:

A portable, self-contained test set designed to provide a rapid, reliable means of checking loop-orienting circuits of Radio Compass Units BC-433-G and R-5/ARN-7 and for checking the loop motor, autosyn, compensator, and indicators of Radio Compasses SCR-269-G and AN/ARN-7. It tests components by means of substitution of various parts and by taking voltage and current measurements of the components under test in actual operation.

RELATIONSHIP TO OTHER EQUIPMENT:

Test Set I-100 was the experimental model for this equipment and the first production model was Test Set I-100-A.

Test Sets I-100-A and I-100-B are interchangeable, both electrically and physically. The resistors and capacitors of Test Set I-100-B are in accordance with JAN specifications. Test Set I-100-B also employs hermetically sealed meters.

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.	Standard		Not Classified
STOCK NOS.	7CAC-801319-264		3F4100B
PROCUREM'T INFO.: USAF Spec. No. 71-1142.			
PROCUREM'T COG.: USAF		DESIGN COG.: USAF, C&N	
F.I.I.N.:		FUNCTIONAL CLASS: 10.2	
- Electronics Test Equipment -			I-100-B

TEST SET I-100-B
(TEST SET, RADIO I-100-B)

ELECTROMECHANICAL DESCRIPTION:

Power Supply: 115 volts, 400 cycles per second, 90 to 115 watts.
Vacuum-Tube Voltmeter Ranges:
  Alternating Volts: 0 to 2.5, 10, 50, and 250 volts.
  Direct Volts: 0 to 10, 50, and 250 volts.
Milliammeter Ranges:
  Alternating Current: 0 to 250, 500, and 750 milliamperes.
  Direct Current: 0 to 500 milliamperes.

MANUFACTURERS' OR CONTRACTORS' DATA:

Bendix Radio Corporation, Baltimore, Maryland; Approximate **Cost per Unit**, $1,000.00.

TUBE COMPLEMENT:

2 JAN-5Z4, 1 JAN-6B8, 1 JAN-6F6, 1 JAN-6H6, 1 JAN-6J5, 2 JAN-0D3/VR150, 2 JAN-2050 or 2051.

REFERENCE DATA AND LITERATURE:

TO 16-40I100-3 (Maintenance Instructions).
TO 16-55-443 (Spare Parts List).

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Over-all Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
1	Test Set, I-100-B, with accessories. (Export packed).	4.70	21	20	19	83.0

TEST SET I-100-B
(TEST SET, RADIO I-100-B)

EQUIPMENT SUPPLIED:

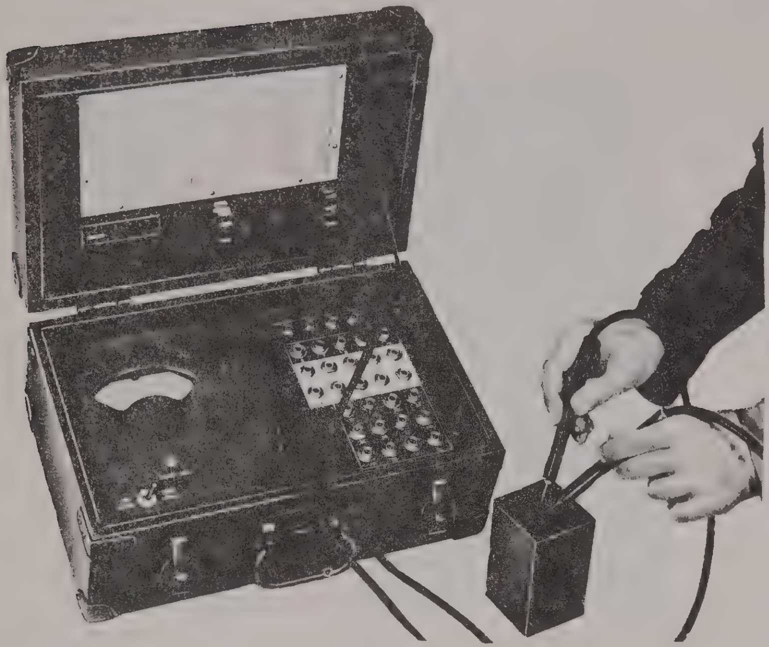
Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Over-all Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Test Set I-100-B (Complete)	Aluminum	7CAC-801319-264 3F4100B	12-7/8	12-1/2	14	
1	Test Unit BC-713-B	Aluminum	7CAC-801319-2593 3F4453B	12-5/8	6-3/4	11-1/4	13.0
1	Line Cord 654						
2	Test Lead		7CAC-468919-75 3EK4500-9				
1	Test Unit BC-714-B	Aluminum	7CAC-801319-2562 3F4454B	12-5/8	5-7/8	10-3/16	18.5
1	Cord CD-548-A		7CAC-170270-1393 3E1548A	120 long	1/2 dia.		1.8
1	Cord CD-549-A		7CAC-170270-1387 3E1549A	120 long	1/2 dia.		1.8
1	Cord CD-550-A		7CAC-170270-1389 3E1550A	120 long	1/2 dia.		1.6
1	Cord CD-551-A		7CAC-170270-1394 3E1551A	36 long	1/2 dia.		0.6
1	Cord CD-552-A		7CAC-170270-1395 3E1552A	36 long	1/2 dia.		0.6
1	Cabinet CY-638/U	Aluminum		12-3/4	12-3/8	13-7/8	10.3
1	Set Spare Tubes						

TEST SET I-100-B
(TEST SET, RADIO I-100-B)

EQUIPMENT SUPPLIED: (Continued)

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Over-all Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Instruction Book						
1	Package of Maintenance Parts						
1	Strap ST-19-B		3300-296491500 2Z9019B	65 long	2 wide		
2	Setscrew Wrench No. 6		7900-859441 6R55230				

BATTERY TESTER TS-183A/U



This research was supported by the USAF under Contract AF 33(038)12897 and monitored by the Wright Air Development Center, ARDC - Carl L. Frederick and Associates, Bethesda, Maryland - Multilithed in U.S.A.

FUNCTIONAL DESCRIPTION:

A portable, general purpose, battery tester used to measure the load and open circuit voltages of dry batteries.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: This battery tester consists of a multiple-range voltmeter, a set of battery-loading resistors, a set of multiple resistors, and a jack-switching arrangement.

Voltmeter Range: 0 to 2, 10, 50, 200, volts, DC.

Voltmeter Sensitivity: 1000 ohms per volt.

MANUFACTURERS' OR CONTRACTORS' DATA:

Aircraft Electronic Associates, Rocky Hill, Connecticut. Army Order 8489-PHILA-48.

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			Standard
STOCK NOS.	1600-327879530		3F4325-183A
PROCUREM'T INFO.: Army Spec. A71-3149			
PROCUREM'T COG.: Army		DESIGN COG.: Army, SSL	
F.I.I.N.:		FUNCTIONAL CLASS: 10.2	
- Electronics Test Equipment -			TS-183A/U

BATTERY TESTER TS-183A/U

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 16-35TS183-5 (TM11-2571) (Instruction Book).
TO 16-35TS183-101 (Modification).

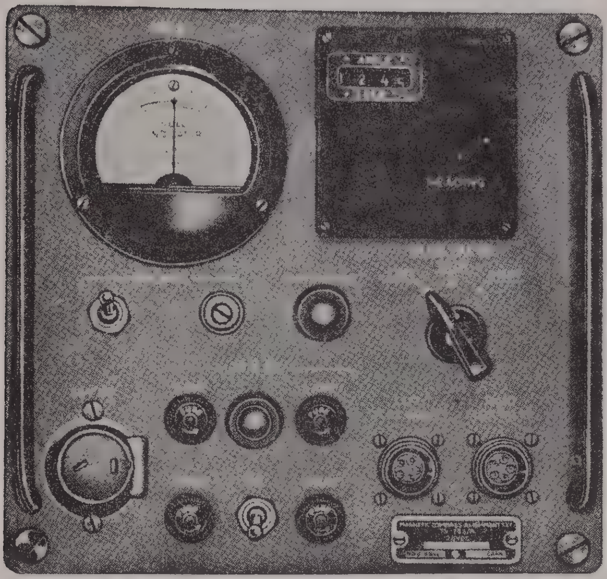
EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Over-all Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Battery Tester TS-183A/U	Wood	1600-327879530 3F4325-183A	7-1/8	15	9-1/2	14.6

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Over-all Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
1	Battery Tester, TS-183A/U (Export Packed)	1.65	11-1/8	19	13-1/2	38.4

MAGNETIC COMPASS ALIGNMENT SET TS-788/A



FUNCTIONAL DESCRIPTION:

A portable, special purpose instrument designed to align magnetic compasses. The test set measures magnetic heading error, direction, and value. Test results are indicated on a null-indicating meter located on the front panel. A mechanical counter indicates magnetic heading in whole degrees and tenths of a degree.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The unit consists essentially of a synchro-control transformer, an amplifier, a double-balanced demodulator, a vibrator, a filter, a full-wave rectifier, a null indicator, and a mechanical counter. The output of either or both flux valve sensing elements is fed through a switch to the synchro-control transformer. The output signal from the transformer is amplified by a 2-stage, resistance-capacitance-coupled amplifier and is then fed into a double-balanced demodulator. The reference voltage for the demodulator is obtained

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.			
PROCUREM'T INFO.:			
PROCUREM'T COG.: BuOrd		DESIGN COG.: Navy, BuOrd	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.2	
	- Electronics Test Equipment -		TS-788/A

MAGNETIC COMPASS ALIGNMENT SET TS-788/A

ELECTROMECHANICAL DESCRIPTION: (Continued)
from a vibrator-filter, full-wave rectifier bridge combination. The demodulator output is fed into a null indicator whose displacement direction and amplitude are a measure of the magnetic-heading error, direction, and value. A battery eliminator should not be used for a power supply.

Power Supply: 28 volts DC ±0.5 volt, 5 amps (internal impedance should not exceed 1 ohm).

MANUFACTURERS' OR CONTRACTORS' DATA:
Norden Laboratories, Corporation, 121 Westmoreland Avenue, White Plains, New York.

TUBE COMPLEMENT:
2 6AJ5, 8 1N56A.

REFERENCE DATA AND LITERATURE:
NAVORD OD 8205.

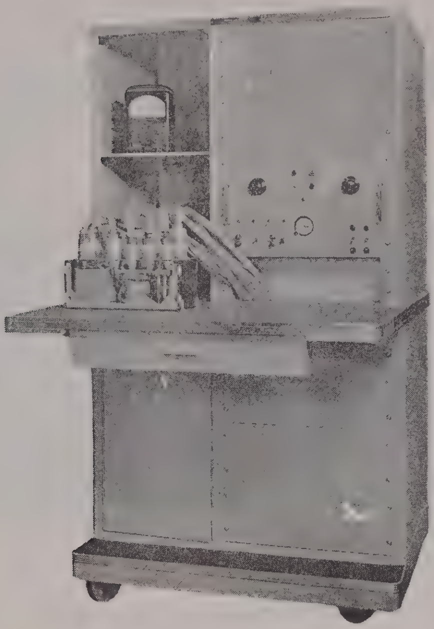
EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Magnetic Compass Alignment Set TS-788/A	metal		11-1/2	10-3/4	9-1/2	18
1	Power Cable						
1	Allen Wrench						
1	Instruction Book						

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
	Magnetic Compass Alignment Set TS-788/A					

TEST SET, TERMINAL BOX
Part No. 10983
(Cal-Tronics Corporation)



FUNCTIONAL DESCRIPTION:

A transportable special purpose test set used to provide complete functional and continuity testing of Terminal Box, North American Aviation 13123-506. This terminal box is a component of the MG-4 Fire Control System. The continuity test results are indicated by neon bulbs. The functional test results are indicated on a voltmeter included with the test set.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The test set checks nineteen simple nodes, twelve complex nodes and twenty-three pin to ground connections for continuity, shorts and spurious connections. The continuity test circuitry consists of a power transformer, half-wave rectifier and filter. The transformer secondary provides two output voltages. One output voltage is used in conjunction with an indicator light for verifying continuity. The other output voltage is rectified, filtered, and applied to a load and indicator light, one side of which is grounded. The common transformer secondary lead is used in checking continuities. This permits both conti-

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.			
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.2	
	- Electronics Test Equipment -		Cal-Tronics 10983

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

TEST SET, TERMINAL BOX
Part No. 10983
(Cal-Tronics Corporation)

ELECTROMECHANICAL DESCRIPTION: (Continued)
nuities and shorts to ground to be indicated in one switching operation. The functional test consists of applying either a 28-volt or 115-volt, 400 cycles per second voltage to a pair of terminals and measuring the output voltage at another pair of terminals.

Power Supply: 115 volts, AC, single-phase, 400 cycles per second, 1 ampere; 28 volts, DC, 0.5 ampere.

Output Voltages: 6.3 volts, AC, 400 cycles per second; 300 volts, AC, 400 cycles per second.

MANUFACTURERS' OR CONTRACTORS' DATA:

Cal-Tronics Corporation, 11307 Hindry Avenue, Los Angeles 45, California; Contract AF 33(600)26479; Approximate Cost per Unit, $5,000.

TUBE COMPLEMENT:

2 - R 5050 Selenium Rectifiers.

REFERENCE DATA AND LITERATURE:

Instruction and Operating Manual, Terminal Box Test Set, Cal-Tronics 10983.

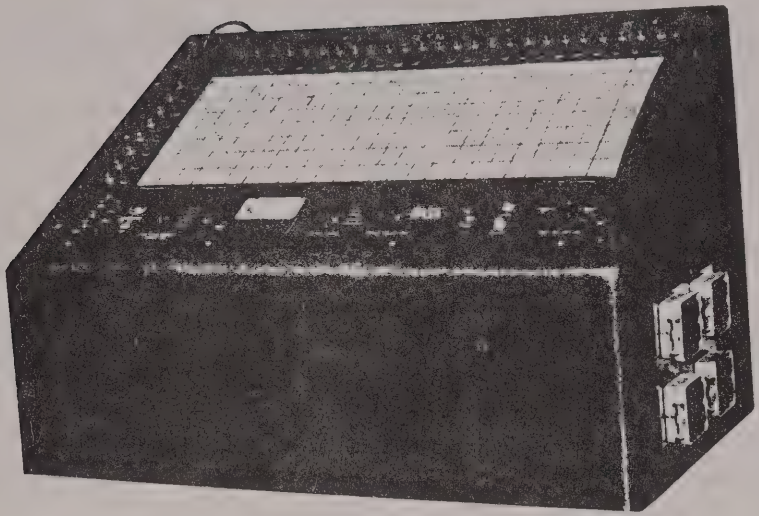
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Test Set, Terminal Box Cal-Tronics 10983			67	37	44	
	Including:						
1	Multimeter Triplet 630A						
1	Set Auxiliary Cables						

CIRCUIT ANALYZER
MODEL 200
(DIT-MCO, Incorporated)



FUNCTIONAL DESCRIPTION:

A portable, general purpose instrument designed to perform continuity, short circuit, and insulation resistance tests on complex electrical circuitry.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The analyzer consists basically of a power supply, a detector circuit, a matrix panel board with peripheral indicating lights, and an ohmmeter. The matrix panel chart consists of 200 squares representing the circuits under test. Illuminated lights on the horizontal and vertical axes of the chart indicate which of the circuits is under test. Information pertaining to each test is written in each of the squares on the matrix panel. Automatic stepping switches move through the 200 circuits under test. If a defective circuit is located by the detector the instrument will stop at that test until a

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.		Standard	
STOCK NOS.			

PROCUREM'T INFO.:

PROCUREM'T COG.: Navy　　DESIGN COG.: Commercial

F.I.I.N.: 6625-679-5471　　FUNCTIONAL CLASS. NO.: 10.2

CIRCUIT ANALYZER
MODEL 200
(DIT-MCO, Incorporated)

ELECTROMECHANICAL DESCRIPTION: (Continued)

manual reset button is depressed. Out-of-tolerance resistance values during continuity, short circuit, or resistance tests cause the detector circuit to activate relays that indicate the defective circuit and stop the instrument from advancing to the next test. The ohmmeter may be switched into the circuit to provide quantitive resistance measurements. Manual tests of any of 200 circuits may be accomplished by depressing two switches corresponding to the desired circuit.

Power Supply: 115 volts, AC, 60 cycles per second, 120 to 150 watts.

Ohmmeter Range: 0 to approximately 500 megohms in 8 steps, RX1, RX10, RX100, RX1000, RX10,000, RX100,000, RX1,000,000, and RX10,000,000 ohms.

Ohmmeter Accuracy: ±3%.

Insulation Resistance Rejection: Preset to reject values below 1.0, 5, 10, 25, 50, 100, or 200 megohms.

Continuity Rejection: Preset to reject resistance values above 20, 35, 40, 90, or 620 ohms at currents of 2.0, 1.5, 1.0, 0.5, or 0.1 amps maximum.

Low Voltage Test: 28 volts, DC.

High Voltage Test: 500 volts, DC.

MANUFACTURERS' OR CONTRACTORS' DATA:

DIT-MCO, Incorporated, 911 Broadway, Kansas City 5, Missouri; Contract No. N123(62738)B55BA; Approximate Cost per Unit, $5580.00.

TUBE COMPLEMENT:

2 VR-105, 1 VR-150, 3 12AU7, 1 5R4, 2 816, 1 115NA30.

REFERENCE DATA AND LITERATURE:

Manufacturers' Instruction Manual.

SHIPPING DATA:

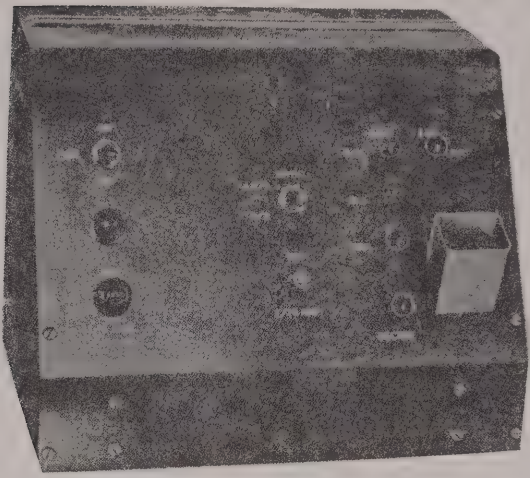
No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches) H	W	D	Weight Packed (Lbs.)
1	Circuit Analyzer, Model 200	21	32-1/2	45-1/2	28-1/2	308

CIRCUIT ANALYZER
MODEL 200
(DIT-MCO, Incorporated)

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Circuit Analyzer DIT-MCO 200	metal		26	40	24	150
1	Kit of Plugs, Matrix Charts and Spare Relays						

TESTER, ALIGNMENT
Part No. NSA-4
(Ford Instrument Company)



FUNCTIONAL DESCRIPTION:

This is a test instrument designed to check the alignment of the amplifier network box of the Amplifier, Electronic Control AM-916/ASN-6, which is part of Computer Set, Latitude and Longitude AN/ASN-6. The tester is operated in conjunction with an auxiliary vacuum tube voltmeter.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The panel contains a ratio switch which permits the correct ratio circuit in the tester to be energized. This switch also connects one of the five panel terminals to the proper phasing potentiometer circuit in the tester. The terminals are used to connect the network box under test to the tester circuit. The alignment of a network box may be checked either in its servo amplifier or in the holder provided on the front panel of the tester.

Two standard network boxes provided with the tester are used in the alignment of the tester before each test. Alignment is accomplished by means of four potentiometers at the back of the chassis. All tester adjustments and network box alignments are indicated on an external, auxiliary vacuum tube voltmeter connected to the tester by means of a shield and connector assembly.

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.			
PROCUREM'T INFO.:			
PROCUREM'T COG.:	DESIGN COG.: Commercial		
F.I.I.N.:	FUNCTIONAL CLASS. NO.: 10.2		

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

TESTER, ALIGNMENT
Part No. NSA-4
(Ford Instrument Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)
Power Supply: 115 volts, AC, 400 cycles per second, single-phase.

MANUFACTURERS' OR CONTRACTORS' DATA:

Ford Instrument Company, Division of the Sperry-Rand Corporation, 31-10 Thomson Avenue, Long Island City, New York.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 33D2-8-18-31 (Operation, Service and Repair Instructions).

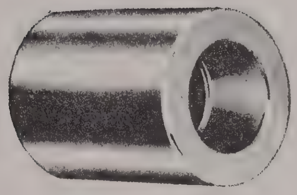
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Tester, Alignment (Ford Inst. NSA-4)			8	10	8	9
	Including:						
2	Network Box						
1	Shield & Connector						
1	Hooked Pin & Sleeve						
1	L-Shaped Pin & Wires						
1	Connector & Wires						

BELLOWS LEVELER
Part No. 211A855P-1
(General Electric Company)



FUNCTIONAL DESCRIPTION:

A portable instrument used to check the level of the radar antenna bellows with respect to the outer tube on the azimuth and elevation bearing sections.

RELATIONSHIP TO OTHER EQUIPMENT:

MECHANICAL DESCRIPTION:

Physical Characteristics: The bellows leveler is a cylindrical aluminum tube, the ends of which are precisely machined to form a true 90° angle to the bore. The tool is placed over the outer tube and the inner rod of either the azimuth or elevation rotating bearing section. The leveler and the bellows bearing section are

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	9CGE-211A855P1		
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.2	
	- Electronics Test Equipment -		G.E. 211A855P-1

is project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U.S.A.

BELLOWS LEVELER
Part No. 211A855P-1
(General Electric Company)

MECHANICAL DESCRIPTION: (Continued)

held at eye level. If the bearing surface is level, no light will appear between the mating surfaces of the leveler and the bellows.

MANUFACTURERS' OR CONTRACTORS' DATA:

General Electric Company, 1 River Road, Schenectady, New York.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 33D5-5-103-1 (Operation and Service Instruction).

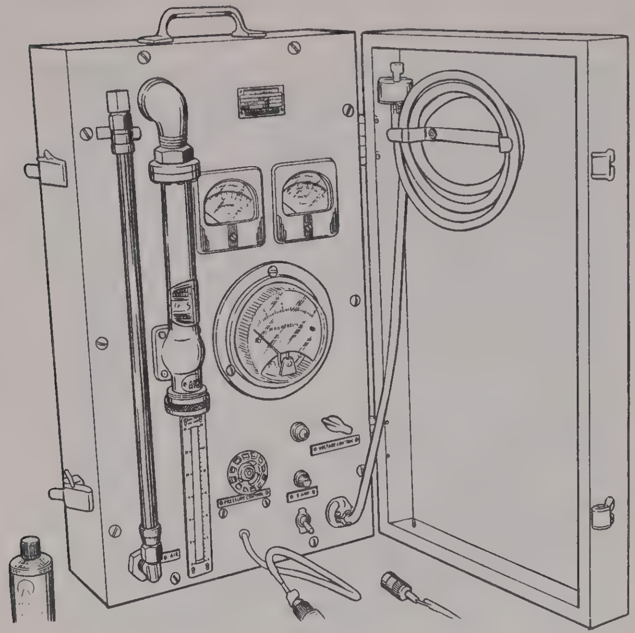
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Bellows Leveler (G.E.211A855P-1)	Aluminum Alloy	9CGE-211A855P-1	1-1/16	13/16 dia.		

FIXTURE, DESICCATOR PUMP TEST
TSY-7028
(General Mills, Inc.)



FUNCTIONAL DESCRIPTION:

This fixture is a portable unit which is used to determine the airflow capacity and the operating current requirements of the type Y-2 and Y-4 Periscopic Bombsight desiccator assemblies. The fixture provides facilities for supplying operating current to the unit under test. The fixture and all accessories are enclosed in a carrying case.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: All meter and operating controls are mounted on the front panel of the fixture. The impressed voltage is regulated by means of a voltage control rheostat. A voltmeter indicates the voltage impressed and an ammeter indicates current required to operate the unit. The air delivered by the unit under test is piped to a flowmeter, a pressure gage, and to a pressure control valve. The flowmeter indicates the quantity of air delivered, and the pressure gage indicates the static air pressure developed by the unit under test. Since the type Y-2 and Y-4 power and air connections are different, a set of adapters is furnished with the fixture for making proper connections.

Power Supply: 28 volts, DC.

Ammeter Range: 0 to 5 amperes, DC.

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAD-806202		
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.2	

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

FIXTURE, DESICCATOR PUMP TEST
TSY-7028
(General Mills, Inc.)

ELECTROMECHANICAL DESCRIPTION: (Continued)

Voltmeter Range: 0 to 50 volts, DC.

Flowmeter Range: 0 to 30 cubic feet of air per hour (at standard conditions of 21.1°C. 70°F.) and 29.92 inches of mercury.

Pressure Gage Range: 0 to 8 inches of water.

MANUFACTURERS' OR CONTRACTORS' DATA:

General Mills, Inc., Mechanical Division, 400 Second Avenue, South Minneapolis, Minnesota; Contract No. AF 33(038)14786, July 1950; Approximate Cost per Unit, $587.00.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 33D5-9-15-1 (Operation and Service Instructions).
TO 33D5-9-15-3 (Overhaul Instructions).
TO 33D5-9-15-4 (Parts Breakdown).

SHIPPING DATA:

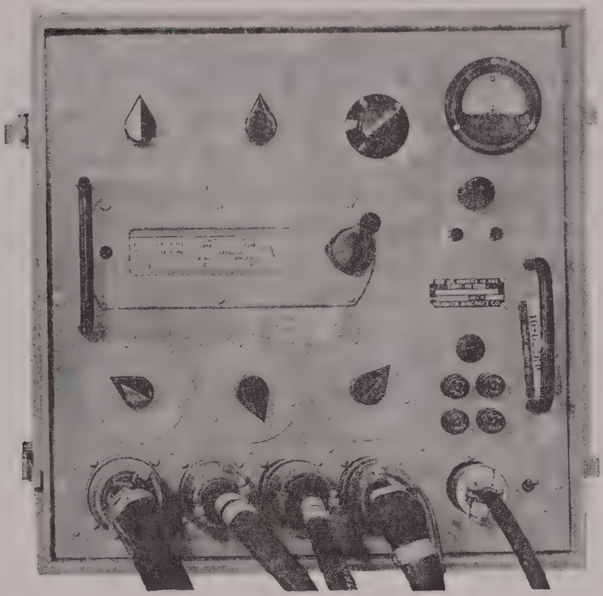
No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
1	Fixture, Desiccator Pump Test (General Mills TSY-7028)	2.17	25	15	10	61

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Fixture, Desiccator Pump Test (General Mills TSY-7028)	Metal	7CAD-806202	22-1/4	13-1/8	6-1/2	50

General Mills TSY-7028 - Electronics Test Equipment -

TEST SET, COMPUTER AIR DATA
Part No. 413011-100
(Hughes Aircraft Company)



FUNCTIONAL DESCRIPTION:

A portable, special purpose, test instrument, used for field testing certain components of Air Data Computers used in the E-9 and MG-3 Fire Control Systems. The instrument is also used to test the Static and Differential Pressure Transmitter, and the Angle of Attack Transmitter. Pressure Transducer Test Set No. 486005-100 (or equivalent) is used with this equipment to check Pressure Transmitters. Test Set, Computer, Wind Sensor No. 404015-110 is used with the equipment to check angles of attack.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: A voltage measuring circuit measures the ratio of RMS output voltage to RMS excitation voltage during the testing of Pressure Transmitters. A simulating circuit provides simulated functions of indicated static and differential pressures, indicated angles of attack, indicated temperature, and "time to go", of the inputs of the transmitter and other associated equipment. Indicated

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.			
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.2	
	- Electronics Test Equipment -		Hughes 413011-100

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U.S.A.

TEST SET, COMPUTER AIR DATA
Part No. 413011-100
(Hughes Aircraft Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)
static and differential pressures are simulated by precision transformers; angle of attack and indicated temperatures are simulated by means of precision resistors.

Power Supply: 115 volts, AC, 50 to 1,000 cycles per second, single-phase. Simulating power is obtained from the Navigational Air Data Computer.

Accuracy: Indicated Static Pressure: ±0.01% of input voltage.
Indicated Differential Pressure: ±0.01% of input voltage.
Indicated Angle of Attack: ±0.20% of ratio of output to input voltage.
Indicated Temperature (resistance equivalent): ±0.1%.
Time To Go: ±0.20% of ratio of output voltage to input voltage.

MANUFACTURERS' OR CONTRACTORS' DATA:
Hughes Aircraft Company; Culver City, California; Contract Nos. AF 33(600)-22742, AF 33(600)27013; 14 September 1954; Approximate Cost per Unit, $4441.00.

TUBE COMPLEMENT:
1 JAN-5751, 1 JAN-6AL5W, 1 JAN-6AV6,

REFERENCE DATA AND LITERATURE:
Handbook of Instructions.
Air Data Computer Test Set - Type 502.
Servomechanism publ. No. 5005 (Rev. July, 1955.).

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
1	Test Set, Computer Air Data (Hughes 413011-100)	9.2	30	23	23	120

TEST SET, COMPUTER AIR DATA
Part No. 413011-100
(Hughes Aircraft Company)

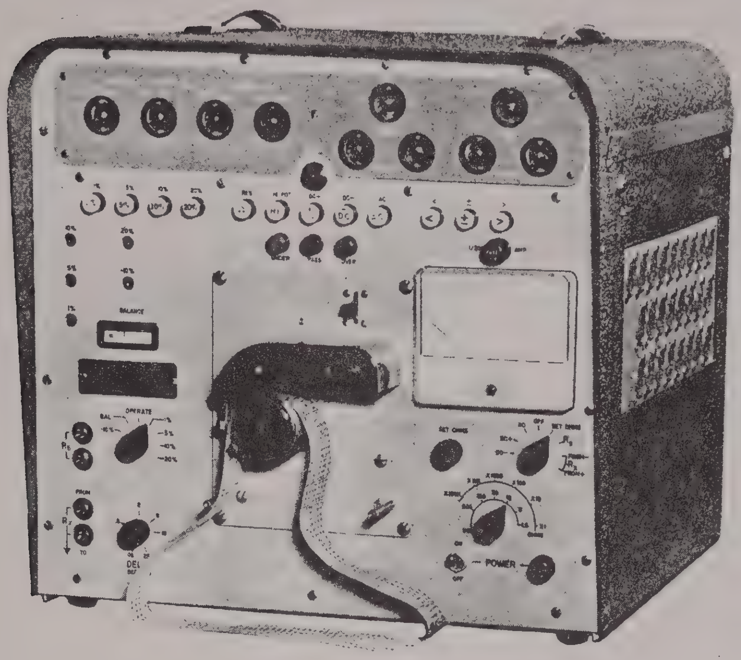
EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Test Set, Computer Air Data (Hughes 413011-100)	Aluminum and Wood Laminate		17	17	21-1/2	80 (Complete)
4	Cable: SM801914 SM801915 SM801916 SM801917			144 Ea.			
1	Cable, Power			144			

ROBOTESTER

Type No. LA-302

(Lavoie Laboratories, Incorporated)



FUNCTIONAL DESCRIPTION:

A portable, general purpose instrument designed to automatically measure AC or DC voltages and DC and insulation resistances between any two of 250 points of a circuit. The test set is primarily used where a large quantity of equipments are to be tested.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The equipment consists basically of telephone type armature relays, stepping switches, a Ledex rotary relay and indicating circuits. The information describing the points of a circuit under test is punched on paper tapes in a binary code. The tape is pulled through a brush assembly by a sprocket wheel. Relays corresponding to the brush contacts grounded by holes in the tape are energized and the other relays remain in the de-energized state. When the contacts of the relays are being pulled in, another circuit supplying

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.			
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.:	Commercial
F.I.I.N.:		FUNCTIONAL CLASS. NO.:	10.2
	- Electronics Test Equipment -		Lavoie LA-302

ROBOTESTER
Type No. LA-302
(Lavoie Laboratories, Incorporated)

ELECTROMECHANICAL DESCRIPTION: (Continued)

current to the energized relays is broken and the sprocket wheel is energized, thus moving the tape to the next line of test information. The time between the initial contact of the brushes and the de-energizing of the relays is approximately 50 milliseconds. During this time the information contained on one line of the tape sets up corresponding conditions within the test instrument. This action is then repeated until all of the test conditions are set up. In operation, after the last line of information is set up, the instrument pauses then starts setting up another test unless an incorrect parameter isindicated. If an incorrect parameter is indicated, the test set holds the test until the operator manually advances the tape to the next test. Each test requires approximately 0.6 seconds to complete. Circuits under test are fed to the Robotester by 25 plug-in connections. Test failures are indicated on the front panel of the instrument by flashing panel lamps. Various tester tolerance limits may be selected.

Power Supply: 115 volts, AC, 60 cycles per second.

Range:

DC Resistance: 1.0 to 1000 ohms in 1.0 ohm steps; 10 to 10,000 ohms in 10 ohm steps; 100 to 100,000 ohms in 100 ohm steps; 1000 to 1,000,000 ohms in 1000 ohm steps; 10,000 to 9,990,000 ohms in 10,000 ohm steps.

Volts: 0.5 to 5 volts in 0.005 volt steps; 0.5 to 50 volts in 0.05 volt steps; 0.5 to 500 volts in 0.5 volt steps.

Insulation Resistance: 0.1 to 100 megohms in 100,000 ohm steps; 1.0 to 1000 megohms in 1.0 megohm steps; 10 to 10,000 megohms in 10 megohm steps.

Tolerence Limit Settings:

DC Resistance: 1%, 5%, 10% and 20%.

Voltage: 1%, 5%, 10% and 20%.

Insulation Resistance: 3%, 15%, 30% and 60%.

MANUFACTURERS' OR CONTRACTORS' DATA:

Lavoie Laboratories, Incorporated, Morganville, New Jersey.

TUBE COMPLEMENT:

REFERENCE DATA AND LITERATURE:

Manufacturer's Catalog.

SHIPPING DATA:

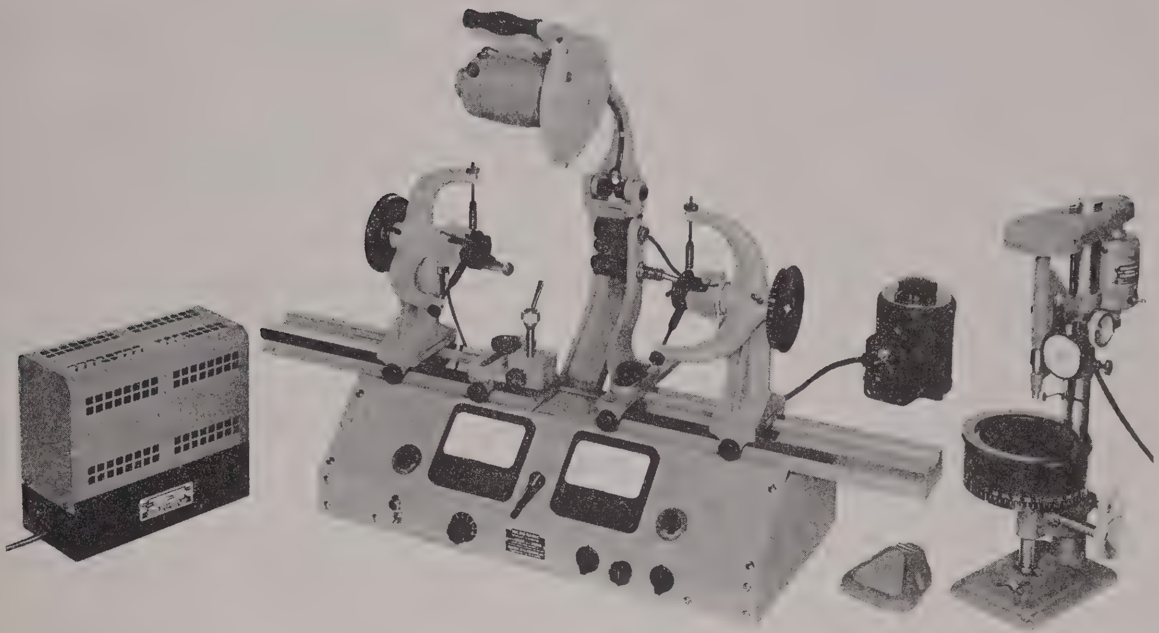
No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
	Robotester, Lavoie LA-302					

ROBOTESTER
Type No. LA-302
(Lavoie Laboratories, Incorporated)

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Robotester Lavoie, LA-302	metal		15-1/2	23-1/4	18-1/2	90

DYNAMIC BALANCER
(Balancer, Dynamic)
Micro-Namic Type EU-2
(Micro Balancing, Inc.)



FUNCTIONAL DESCRIPTION:

This is a portable unit which is used for locating the position of unbalance and the amount of unbalance of any rotor, armature, or other high-speed rotating part whose weight and dimensions are within the limitations of the balancer.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The balancer circuit provides a means for measuring the amplitude of oscillation of a rotating body as well as a means for measuring angular displacements on that body while rotating. The circuit consists of a signal system amplifier, controls, meters, and an exciter lamp-photocell assembly. A friction drive assembly causes the unit under test to rotate. A headstock at either end of the unit incorporates signal generating systems and also serves

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-089012		
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.2	
	- Electronics Test Equipment -	Micro Balan. Type EU-2	

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

DYNAMIC BALANCER
(Balancer, Dynamic)
Micro-Namic Type EU-2
(Micro Balancing, Inc.)

ELECTROMECHANICAL DESCRIPTION: (Continued)
as a support for mounting the unit to be tested. Suspension of the unit between the headstock permits it to move about its mass axis when rotated. The oscillations caused by unbalance are converted into vibration signal voltages, the magnitude of which are indicative of the amount of unbalance. The position of the unbalance is located by a phase comparision of the vibration signal with a photocell signal derived from the rotating unit. The signal generated by the photocell is used as a reference signal, providing an indication of the speed of the unit under test. This is accomplished by applying a nonreflective surface to 180° of the unit's periphery. The light beams, alternately reflected every 180° of rotation, originate pulse signals which are fed into the amplifier of the balancer. Speed of rotation is read on a "rotor speed" meter on the front panel of the balancer. A "drill depth" meter, also located on the front panel, indicates the amount of unbalance and provides a direct reading of the drill depth required to correct the unbalance. A specially designed drill press is used to perform the drilling operation.

Power Supply: 115 volts, AC, 60 cycles per second, single phase.

Limits: The balance is used to locate the position and amount of unbalance of units within the following limits:
Length: 28 inches
Diameter: 14 inches
Weight: 40 pounds.

Balancing Speed: 2,000 to 10,000 rpm.

Accuracy: 0.000002 ounce-inch detection.

MANUFACTURERS' OR CONTRACTORS' DATA:
Micro Balancing, Inc., 191 Herricks Road, Garden City Park, New York; Contract No. AF 33(604)7767, dated July 1953; Approximate Cost, 102 machines at $2700.00 each.

TUBE COMPLEMENT:
3 JAN-6AU6, 4 JAN-6C4, 1 JAN-6J6, 1 JAN-12AX7, 1 JAN-6BE6, 1 JAN-6BF6.

REFERENCE DATA AND LITERATURE:
TO 33A8-2-5-1 (Operation and Service Instructions).
TO 33A8-2-5-4 (Parts Breakdown).

DYNAMIC BALANCER
(Balancer, Dynamic)
Micro-Namic Type EU-2
(Micro Balancing, Inc.)

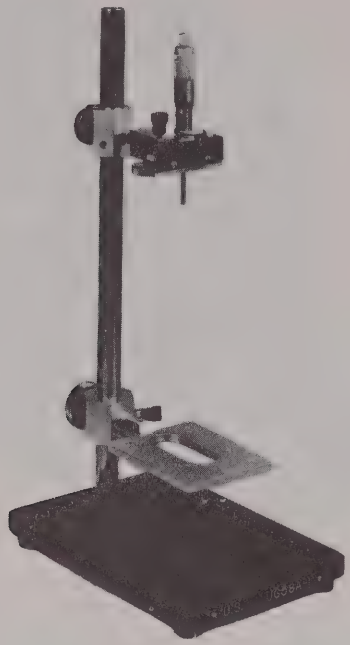
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
1	Balancer, Dynamic Micro Balancing Type EU-2					300

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Balancer, Dynamic Micro Balancing Type EU-2	Metal	7CAC-089012	25	29	55	250
1	Cable Assembly						

CALIBRATOR, BELLOWS TRAVEL
Part No. UG58A-1
(Minneapolis-Honeywell Regulator Company)



FUNCTIONAL DESCRIPTION:

A portable overhaul and maintenance test fixture designed to facilitate the mechanical testing and calibration of the PG 7007B-2 Airspeed Compensator, a component of the MH-11C-1 Autopilot System. It is used to measure the travel of the compensator bellows at the top of the compensator spring assembly.

RELATIONSHIP TO OTHER EQUIPMENT:

MECHANICAL DESCRIPTION:

The calibrator consists of a bench mounted stand with adjustable mountings for the base of the airspeed compensator and for a standard type depth micrometer. The micrometer is electrically insulated from the calibrator stand and terminals are provided to permit a continuity test to be made between the stand, compensator, and micrometer. This provides a precise means of determining contact or disengagement between the micrometer and the compensator bellows.

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAD-170275-9622		
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.:	10.2
	- Electronics Test Equipment -	M.-Honeywell UG58A-1	

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

CALIBRATOR, BELLOWS TRAVEL
Part No. UG58A-1
(Minneapolis-Honeywell Regulator Company)

MANUFACTURERS' OR CONTRACTORS' DATA:

Minneapolis-Honeywell Regulator Company, Aeronautical Division, 2600 Ridway Road, Minneapolis 13, Minnesota; Contract No. AF 33(600)22794.

REFERENCE DATA AND LITERATURE:

Manufacturer's Data Sheet and Drawing.

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

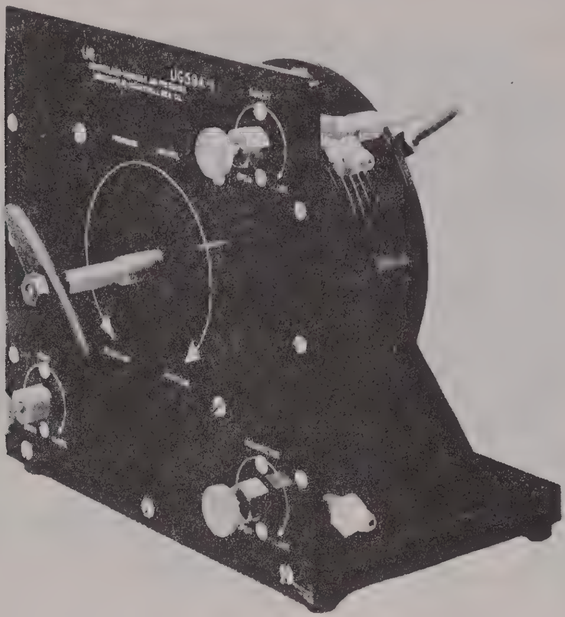
EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Calibrator, Bellows Travel Minneapolis-Honeywell Part No. UG58A-1		7CAD-170275-9622	17	6	8	15

CONTROLLER, VARIABLE AIR PRESSURE

Part No. UG 59A-1

(Minneapolis-Honeywell Regulator Company)



FUNCTIONAL DESCRIPTION:

A portable tool which is used in the final assembly of the PG 7030B Altitude Control. It is used to calibrate and adjust the sense unit component of the altitude control.

RELATIONSHIP TO OTHER EQUIPMENT:

MECHANICAL DESCRIPTION:

Physical Description: The controller consists of a frame upon which is mounted a bellows and control valves. A hand-operated control regulates the airflow through the controller. Because of the variable air pressure it may be used to calibrate and adjust the sense unit for overall sensitivity, area compensation, basic sensitivity, and thermal-compensation.

Power Supply: None required.

MANUFACTURERS' OR CONTRACTORS' DATA:

Minneapolis-Honeywell Regulator Company, 2753 Fourth Avenue, Minneapolis 8, Minnesota; Contract No. AF 33(600)22794.

REFERENCE DATA AND LITERATURE:

Minneapolis-Honeywell data sheet.

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-224350		
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.2	
	- Electronics Test Equipment - M. Honeywell UG 59A-1		

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

CONTROLLER, VARIABLE AIR PRESSURE
Part No. UG 59A-1
(Minneapolis-Honeywell Regulator Company)

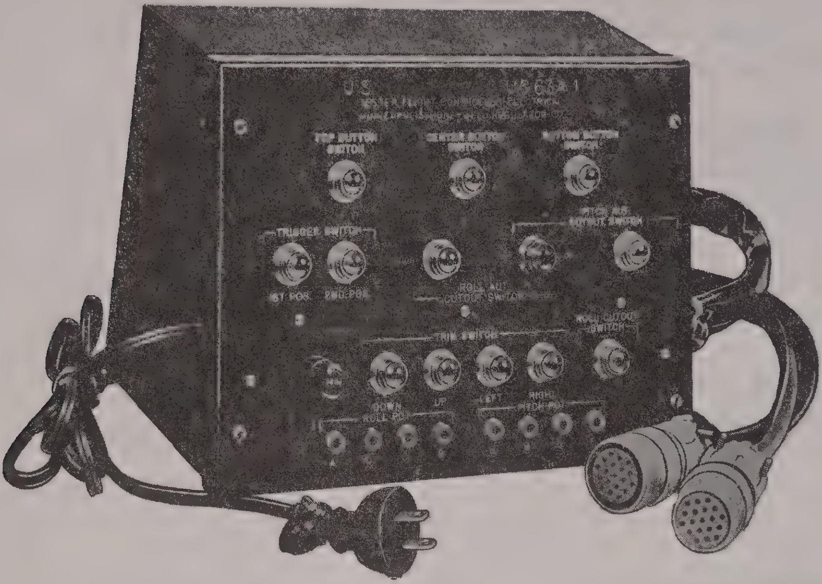
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Controller, Variable Air Pressure (Minneapolis-Honeywell UG 59A-1)	Metal and Bakelite	7CAC-224350	7	6	6	5

TESTER-FLIGHT CONTROLLER ELECTRICAL
Part No. UG63A-1
(Minneapolis-Honeywell Regulator Company)



FUNCTIONAL DESCRIPTION:

A portable special purpose tool which is used in the testing and adjusting of the CG1A-1 Flight Controller, which is a component of the E-12 Autopilot. It is used in conjunction with a suitable protractor that can measure angular displacement of the control handle from its normally vertical position.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: Signal lights located in the front panel of the tester indicate the true cutout switch positions of the Flight Controller. Jacks provide a means for attaching an ohmmeter to the pitch and roll potentiometers of the unit under test. Connections are made by means of two AN connectors. Deviations of the Flight Controller during the testing operation are registered by the signal lights in the tester and appropriate adjustments may be made.

Power Supply: 115 volts, AC, 60 cycles per second.

Accuracy: Signal lights marked "Roll Automatic Cutout Switch" and "Pitch Automatic Cutout Switch" light when the control arm of the equipment under test is displaced

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAD-001475		
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.2	
	- Electronics Test Equipment - M. -Honeywell UG63A-1		

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

TESTER-FLIGHT CONTROLLER ELECTRICAL
Part No. UG63A-1
(Minneapolis-Honeywell Regulator Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)

5° ±2° in either the roll or pitch axis. When the control arm is displaced 1° either side of center, the deviation between the ohmmeter readings must not be more than five ohms.

MANUFACTURERS' OR CONTRACTORS' DATA:

Minneapolis-Honeywell Regulator Company, 2753 Fourth Avenue, Minneapolis 8, Minnesota; Contract No. AF 33(600)19245.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

Manufacturer's Catalog, Form ADT-307.

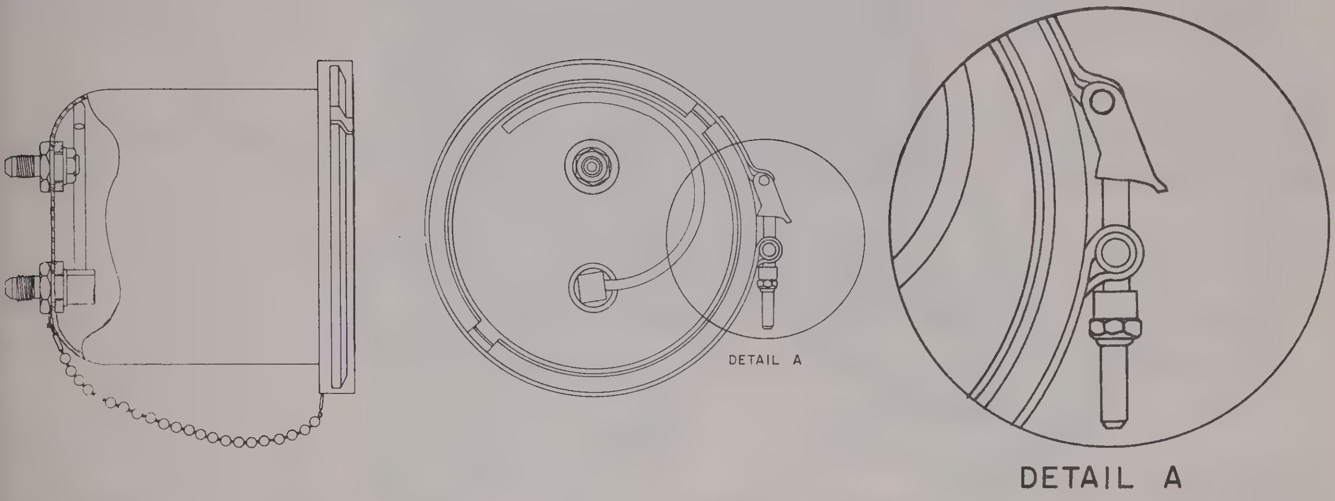
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Tester-Flight Controller Electrical Minneapolis-Honeywell Part No. UG63A-1	Metal	7CAD-001475				

TESTER, BELLOWS, AREA COMPENSATION
Part No. UG 115A-1
(Minneapolis-Honeywell Regulator Company)



FUNCTIONAL DESCRIPTION:

A special purpose, portable fixture which is used at depot-level maintenance for calibrating the number 421873 Sense Unit, and also for the final assembly check on the number PG 7030B Altitude Control. It is used in conjunction with the UG 61A-1 Sense Unit Tester. The bellows tester is placed over the unit to be calibrated and air supply lines are attached. The unit is tested by controlling the air pressure in and around the sense unit.

RELATIONSHIP TO OTHER EQUIPMENT:

MECHANICAL DESCRIPTION:

Physical Characteristics: The tester consists of a metal bell jar through which are passed two fittings for air line connections. A rubber tube extends from one of the fittings to the unit under test. The other fitting provides a means of controlling the air pressure in the space between the bell jar and the unit under test. The

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-802384-55		
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10, 2	
	- Electronics Test Equipment -M.-Honeywell UG 115A-1		

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

TESTER, BELLOWS, AREA COMPENSATION
Part No. UG 115A-1
(Minneapolis-Honeywell Regulator Company)

MECHANICAL DESCRIPTION: (Continued)

bell jar sets on a base and a special clamping band holds the two together for an airtight seal during testing. A window is located in the side of the tested to provide a means of observing the sense unit under test. By regulating the air pressure in and around the sense unit the calibrating process may be performed. Indications of the test results are read on the UG 61A-1 Sense Unit Tester.

MANUFACTURERS' OR CONTRACTORS' DATA:

Minneapolis-Honeywell Regulator Company, Aeronautical Division, 2600 Ridway Road, Minneapolis 13, Minnesota; Contract No. AF 33(600)22794.

REFERENCE DATA AND LITERATURE:

Minneapolis-Honeywell Work Order 1806.
Minneapolis-Honeywell Engineering Spec. 4244A.
Minneapolis-Honeywell Dwg. No. UG 115A-1.

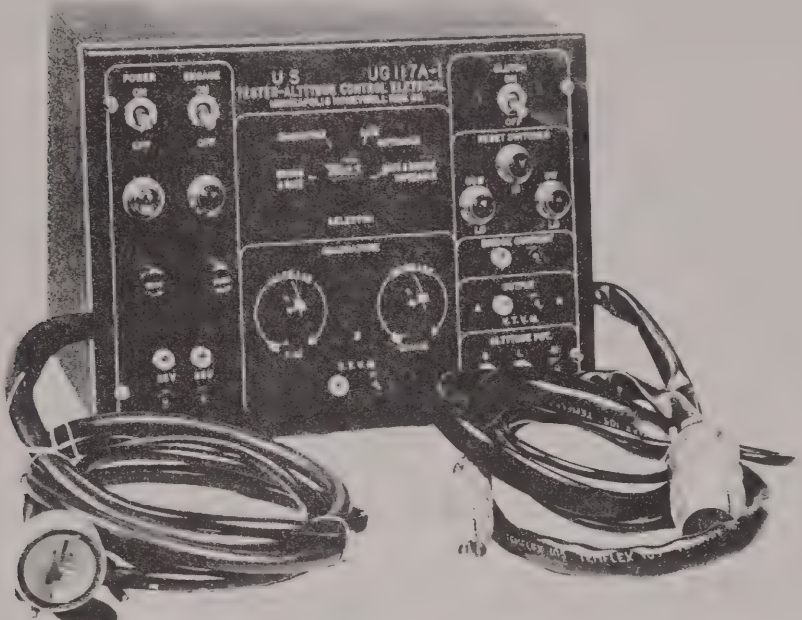
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Tester, Bellows Area Compensation (Honeywell UG115A-1)	Metal	7CAC-802384-55	15	5-1/2 dia.		6-1/2

TESTER, ALTITUDE CONTROL
Part No. UG 117A-1
(Minneapolis-Honeywell Regulator Company)



FUNCTIONAL DESCRIPTION:

A maintenance and overhaul device used to test the Altitude Control PG 7030B. The tester contains switches, indicating lights, and circuits for introducing electrical signals into the altitude control under test. The tester may also be used to calibrate a 423388 Sense Unit.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: A polarized plug provides for AC input to the tester. DC power is introduced through clips. A fader motor can be made to fade in or out by the operation of a switch. A signal selector, operated by a switch, controls the signal which is present when the motor is faded in and proper potential is applied to the unit under test. Jacks are provided for connecting an ammeter or a vacuum tube voltmeter.

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-801675		
PROCUREM'T INFO.:			
PROCUREM'T COG.:	DESIGN COG.: Commercial		
F.I.I.N.:	FUNCTIONAL CLASS. NO.: 10.2		
	- Electronics Test Equipment -M. Honeywell UG 117A-1		

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U.S.A.

TESTER, ALTITUDE CONTROL
Part No. UG 117A-1
(Minneapolis-Honeywell Regulator Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)

Power Supply: 115 volts, AC, 400 cycles per second, 25 watts; and 28 volts, DC, 25 watts.

MANUFACTURERS' OR CONTRACTORS' DATA:

Minneapolis-Honeywell Regulator Company, Aeronautical Division, 2600 Ridway Road, Minneapolis 13, Minnesota; Contract No. AF 33(600)22794.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

Minneapolis-Honeywell Engineering Specification No. 4234A.

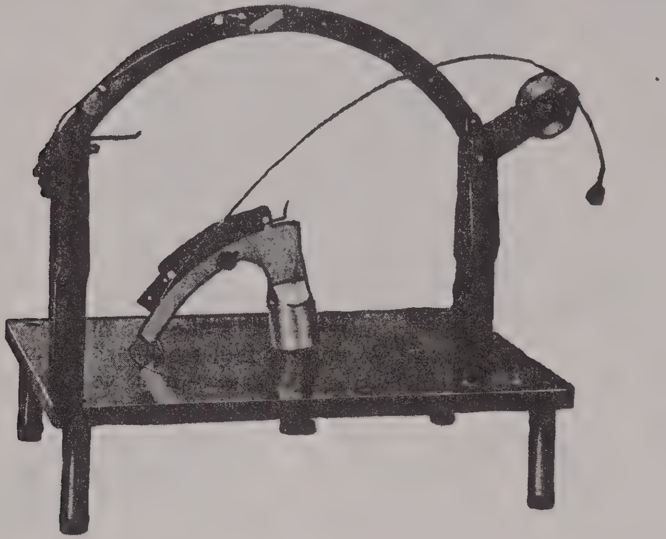
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Tester, Altitude Control (Minneapolis-Honeywell UG 117A-1)	Aluminum	7CAC-801675	5-1/2	10	7	5-1/2

TESTER-FLIGHT CONTROLLER TORQUE AND DISPLACEMENT
Part No. UG136A-1
(Minneapolis-Honeywell Regulator Company)



FUNCTIONAL DESCRIPTION:

A portable unit which is used to make mechanical and electrical measurements on the CG1A-1 Pistol-Grip-Actuated Flight Controller. It is used in conjunction with weights and a timer to determine damping setting, displacement force, holding force, and return time of the flight controller grip.

RELATIONSHIP TO OTHER EQUIPMENT:

MECHANICAL DESCRIPTION:

Physical Characteristics: The tester is a mechanical device upon which a CG1A-1 Flight Controller is mounted for testing. By completing the electrical circuits between the unit under test and a UG63A-1 Flight Controller Electrical Tester the flight controller is actuated. A weight on the mechanical tester applies a force against the unit under test, causing a pointer to be moved across a calibrated protractor. By checking the operation of the unit under test against predetermined limitations, the quality of the unit is determined.

Power Supply: None required.

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAD-658750		
PROCUREM'T INFO.:			
PROCUREM'T COG.:	DESIGN COG.: Commercial		
F.I.I.N.:	FUNCTIONAL CLASS. NO.: 10.2		
	- Electronics Test Equipment -M. -Honeywell UG136A-1		

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

TESTER-FLIGHT CONTROLLER TORGUE AND DISPLACEMENT
Part No. UG136A-1
(Minneapolis-Honeywell Regulator Company)

MANUFACTURERS' OR CONTRACTORS' DATA:
Minneapolis-Honeywell Regulator Company, 2753 Fourth Avenue, Minneapolis, Minnesota; Contract No. AF 33(600)19245.

REFERENCE DATA AND LITERATURE:
TO 33D3-4-21-1 (Instructions and Parts Breakdown).

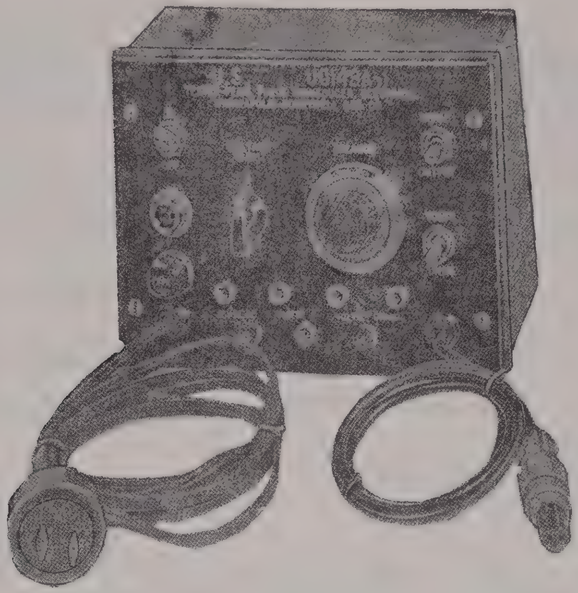
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Tester-Flight Controller Torgue and Displacement Minneapolis-Honeywell Part No. UG136A-1	Metal	7CAD-658750	13-1/4	14-7/8	10-1/2	10.5
M. -Honeywell UG136A-1- Electronics Test Equipment -							

TESTER, PEDAL FORCE TRANSDUCER, ELECTRICAL
Part No. UG 149A-1
(Minneapolis-Honeywell Regulator Company)



FUNCTIONAL DESCRIPTION:

A portable tester used at overhaul depot-level for testing, assembling, and calibrating the LG3A-2 Rudder Pedal Force Transducer, a component of the MH 11C-1 Autopilot. The tester forms a bridge circuit with the transducer, supplying input voltage and providing test jacks for the measurement of voltage ratios and resistances as the transducer is actuated.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: Circuitry consists of switches, potentiometers, tip jacks, fuses, resistors, an indicator lamp, and other components necessary to measure the output characteristics of the transducer potentiometer while input forces are applied to the unit. The tester measures the correlation of input-output voltage ratios to transducer shaft displacement. An auxiliary vacuum tube voltmeter and a volt-ohmmeter are connected to the tip jacks for voltage indications. Other controls on the front panel are as follows:

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAD-807640		
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.:	10.2
		- Electronics Test Equipment -	M.-Honeywell UG 149A-1

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

TESTER, PEDAL FORCE TRANSDUCER, ELECTRICAL
Part No. UG 149A-1
(Minneapolis-Honeywell Regulator Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)

(1) Voltage Adjust Switch-this potentiometer controls the voltage supplied to the input of the unit under test.
(2) Balance Potentiometer-rebalances the bridge formed by the tester and transducer as the bridge is unbalanced by displacement of the transducer shaft and its attached potentiometer.
(3) Input-Output Switch-connects the input or output of the transducer to the "Volts" and "Ohms" jacks on the tester panel.
(4) Volt-Ohms Switch-selects portions of the test circuit which permits the alternate, but not simultaneous, measurement of voltage or resistance at the corresponding tip jacks.

Power Supply: 115 volts, AC or DC.

MANUFACTURERS' OR CONTRACTORS' DATA:

Vendor: Minneapolis-Honeywell Regulator Company, Aeronautical Division, 2600 Ridway Road, Minneapolis 13, Minnesota.

Contractor: Douglas Aircraft Company, Inc., Long Beach 1, California; Contract No. AF 33(600)16314.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 33D3-4-38-1 (Parts Breakdown).
Minneapolis-Honeywell Engineering Specification 4224A.

SHIPPING DATA:

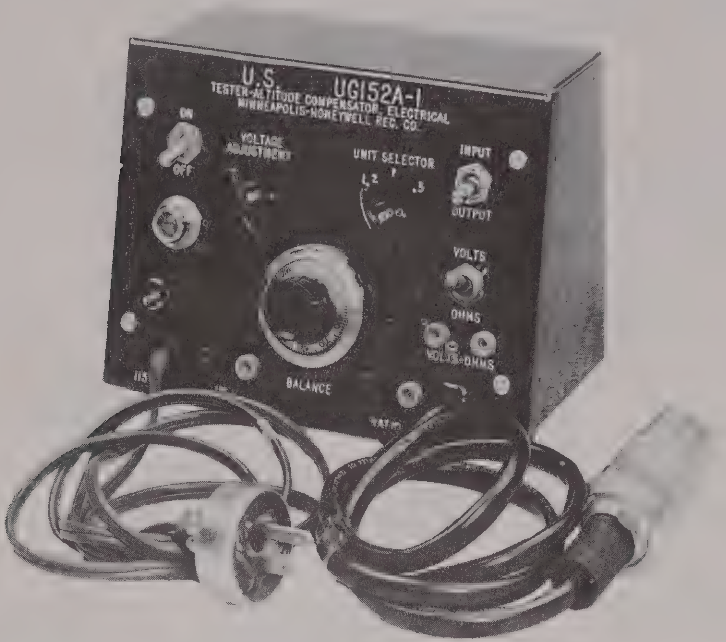
No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
M.-Honeywell UG 149A-1- Electronics Test Equipment -						

TESTER, PEDAL FORCE TRANSDUCER, ELECTRICAL
Part No. UG 149A-1
(Minneapolis-Honeywell Regulator Company)

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Tester, Pedal Force Transducer, Electrical (Minneapolis-Honeywell UG 149A-1)	Aluminum	7CAD-807640	5-3/4	7-3/8	4-3/4	2-1/3

TESTER, ALTITUDE COMPENSATOR, ELECTRICAL
Part No. UG 152A-1
(Minneapolis-Honeywell Regulator Company)


U.S.
UG152A-1
TESTER-ALTITUDE COMPENSATOR, ELECTRICAL
MINNEAPOLIS-HONEYWELL REG. CO.
ON
OFF
VOLTAGE ADJUSTMENT
UNIT SELECTOR
INPUT
OUTPUT
VOLTS
OHMS
VOLTS-OHMS
BALANCE

FUNCTIONAL DESCRIPTION:

A special purpose overhaul tester used to measure the characteristics of the two potentiometers in the PG4A Altitude Compensator. The equipment is designed to indicate input and output voltage and resistance. It also provides facilities for checking continuity between the connector pin and either potentiometer.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: AC or DC power is supplied to the tester through a polarized plug. A cable and connector are provided for making electrical connections between the tester and the unit under test. Two potentiometers, switches, pilot lamps, and resistors make up the components of the system.

Power Supply: 115 volts, DC, or 115 volts, AC, 60 cycles per second, single phase, 6 watts.

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-801670		
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.2	
	- Electronics Test Equipment -M. Honeywell UG 152A-1		

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

TESTER, ALTITUDE COMPENSATOR, ELECTRICAL
Part No. UG 152A-1
(Minneapolis-Honeywell Regulator Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)
Potentiometer Calibrations: Inner Dial: 100 divisions.
Outer Dial: 20 divisions.

MANUFACTURERS' OR CONTRACTORS' DATA:
Minneapolis-Honeywell Regulator Company, 2753 Fourth Avenue, Minneapolis 8, Minnesota; Contract No. AF 33(600)22794.

TUBE COMPLEMENT:
None.

REFERENCE DATA AND LITERATURE:
Minneapolis-Honeywell Data sheet.

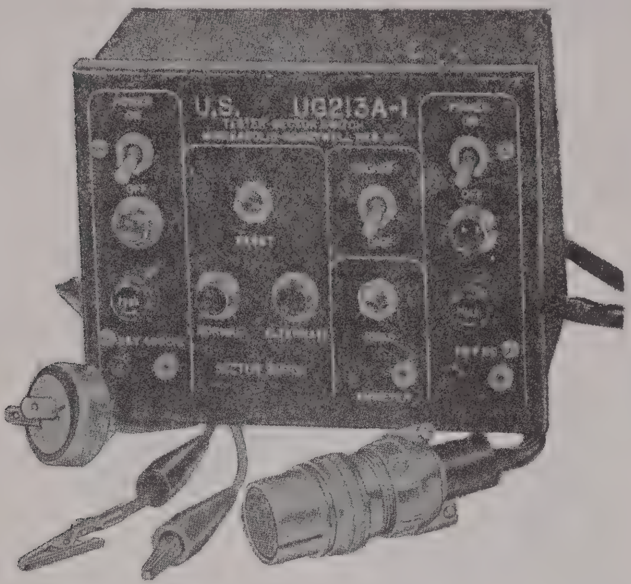
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Tester, Altitude Compensator, Electrical (Honeywell UG 152A-1)		7CAC-801670	5-3/4	7-3/8	4-3/4	2-1/2

TESTER, SECTOR SWITCH
Part No. UG 213A-1
(Minneapolis-Honeywell Regulator Company)



FUNCTIONAL DESCRIPTION:

This is a portable instrument designed to be used with the UG 45A-2 Dividing Head and Stand in the adjusting of the sector switches of cageable vertical gyros Nos. JG 7044D-1, -2, -3, and -4.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The tester circuit contains switches, indicator lights, and circuitry for energizing the gyro and testing the sector switch action. The tester, together with the UG 45A-2 Dividing Head and Stand, is used for measuring the accuracy of the sector switch closure point as compared to the sector switch dial settings. The tester panel contains power switches for the AC and DC power supplies. Pilot lamps give indication when power is on. Toggle switches are provided to permit the following functions: (1) resetting the sector switch test circuits and thus causing the corresponding indicator lamps on the panel to be de-energized, (2) caging or uncaging the rotor in the gyro of the sector switch under test, (3) connecting the test circuit to jacks on the panel in order to permit using an external ammeter for measurements.

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-809661-65		
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.2	
	- Electronics Test Equipment - M. Honeywell UG 213A-1		

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

TESTER, SECTOR SWITCH
Part No. UG 213A-1
(Minneapolis-Honeywell Regulator Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)
Power Supply: 115 volts ± 5%, AC, 400 cycles per second, single-phase, 50 watts; 28 volts ± 5%, DC.

MANUFACTURERS' OR CONTRACTORS' DATA:
Minneapolis-Honeywell Regulator Company, 2753 4th Avenue, Minneapolis 8, Minnesota; Contract AF 33(600)25221.

TUBE COMPLEMENT:
2 Selenium Rectifiers.

REFERENCE DATA AND LITERATURE:
TO 33D5-5-92-1 (Instructions and Parts).

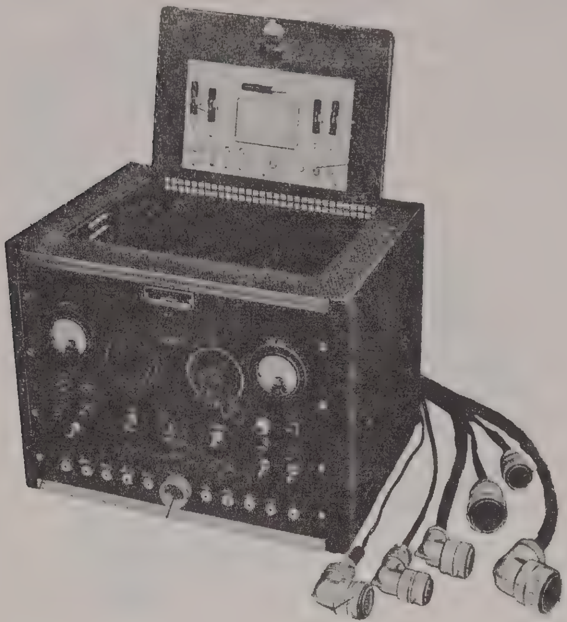
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Tester, Sector Switch Minneapolis-Honeywell UG 213A-1)		7CAC-809661-65	4-1/2	7-1/2	5	2

ANALYZER-POLAR CONVERTER
(Polar Converter Analyzer)
Part No. T-101055
(Sperry Gyroscope Company)



FUNCTIONAL DESCRIPTION:

A portable analyzer used in conjunction with the Power Supply Junction Box Sperry T-101126 and the Component Resolver Tester Assembly Sperry T-101009 to test the components of the Polar Converter type A-1, which is a major component of the A-1 and A-1A Bombing-Navigational Computer. The analyzer supplies simulated altitude signals and monitors output signals. It also checks and measures currents, voltages, and error signal characteristics, and serves as a junction box between the power supply box, polar converter, and component resolver tester assembly.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: Electrical connections are made with the converter under test and the supporting service equipments by means of cable assemblies. The analyzer in effect replaces the altitude, azimuth, ground range, auxiliary circuits, and certain synchros of the unit under test. The altitude knob on the front of the analyzer is manually positioned to a desired setting. This in turn operates a gear train which positions the "Fine" and "Coarse" altitude dials. A control synchro is also rotated and the signal developed is passed through the altitude

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-040250-8		
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.2	
	- Electronics Test Equipment -Sperry Part No. T-101055		

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

ANALYZER-POLAR CONVERTER
(Polar Converter Analyzer)
Part No. T-101055
(Sperry Gyroscope Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)
amplifier. The amplified signal drives the altitude motor of the converter. As the motor rotates it drives the repeater synchro toward a null and also drives the coarse and fine altitude synchros in the converter. These two synchros are independently connected to the repeater in the synchro in the analyzer. This synchro rotates the "Fine-Coarse" altitude dial of the analyzer which indicates the altitude computed by the converter. The accuracy of the unit under test is determined by comparing output altitude readings with input readings. The field current of the altitude motor is measured by means of the component resolver tester assembly. By positioning the "Amplifier Output Current" selector switch when the analyzer is in use, the amount of output current supplied to the converter may be read on the milliammeters.

Power Supply: A Power Supply Junction Box Sperry No. T-101126 is required. This junction box receives its power from a 115 volts, AC, 400 cycles per second, single phase, and a 27 volts DC source.

MANUFACTURERS' OR CONTRACTORS' DATA:
Sperry Gyroscope Company, Great Neck, Long Island, New York; Contract No. AF 33(600)6565.

TUBE COMPLEMENT:
None.

REFERENCE DATA AND LITERATURE:
TO 33D5-5-21-1 (Operation and Service Instructions).
TO 33D5-5-21-4 (Parts Breakdown).

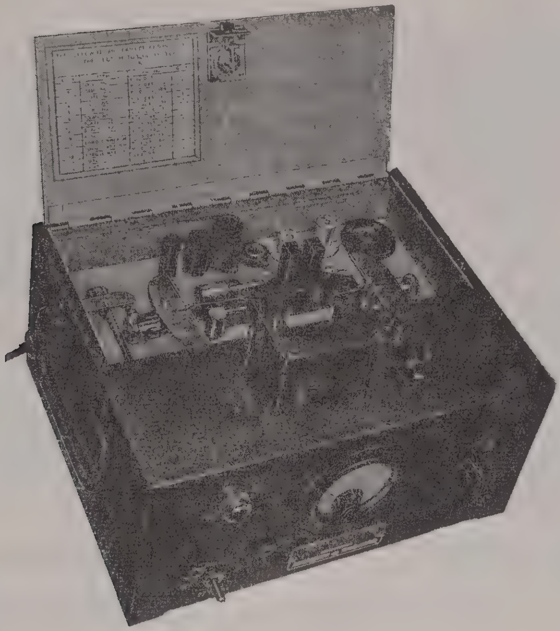
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Analyzer-Polar Converter Sperry Part No. T-101055		7CAC-040250-8	15-3/4	16	21-7/8	50
Sperry Part No. T-101055- Electronics Test Equipment -							

TESTER, CLUTCH TORQUE
Part No. T-101065
(Sperry Gyroscope Company)



FUNCTIONAL DESCRIPTION:

A portable tool which is used at depot level for the purpose of checking the operation and slip torque of the magnetic clutches found in the Tracking Computers, type B-2, B-2A, MJ-1, and MJ-1A of the A-1A and ME-5 Bombing-Navigational Computers, respectively. The tester contains adapters and torque wrenches, and provides the power necessary to energize the clutches. The tester is housed in a cabinet on top of which is positioned a mounting block for the unit under test.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The torque tester has a rheostat, a power switch, an indicator lamp, fuseholders, and a voltmeter mounted on the front panel of the cabinet. The unit to be tested is positioned on the mounting block on top of the tester after the proper couplings have been attached to its shaft and cores. The clutch is energized by a DC current. The torque required to rotate the shaft is increased suffi-

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CSG-T101065		
PROCUREM'T INFO.:			
PROCUREM'T COG.:	DESIGN COG.: Commercial		
F.I.I.N.:	FUNCTIONAL CLASS. NO.: 10.2		

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

TESTER, CLUTCH TORQUE
Part No. T-101065
(Sperry Gyroscope Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)

ciently to drive the clutch. By attaching one of the torque wrenches to the shaft and rotating it manually at approximately 12 rpm, the torque required for the shaft rotation can be measured. A DC voltmeter provides an indication of the voltage required to energize the clutch during testing.

Power Supply: 27 volts, DC, 4.5 volts, DC (supplied by an internal dry battery).
Meter Measuring Range: 0 to 30 volts, DC.

MANUFACTURERS' OR CONTRACTORS' DATA:

Sperry Gyroscope Company, Division of the Sperry-Rand Corporation, Great Neck, Long Island, New York; Contract No. AF 33(600)6565.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 33D5-5-61-1 (Operation and Service Instructions).
TO 33D5-5-61-4 (Parts Breakdown).

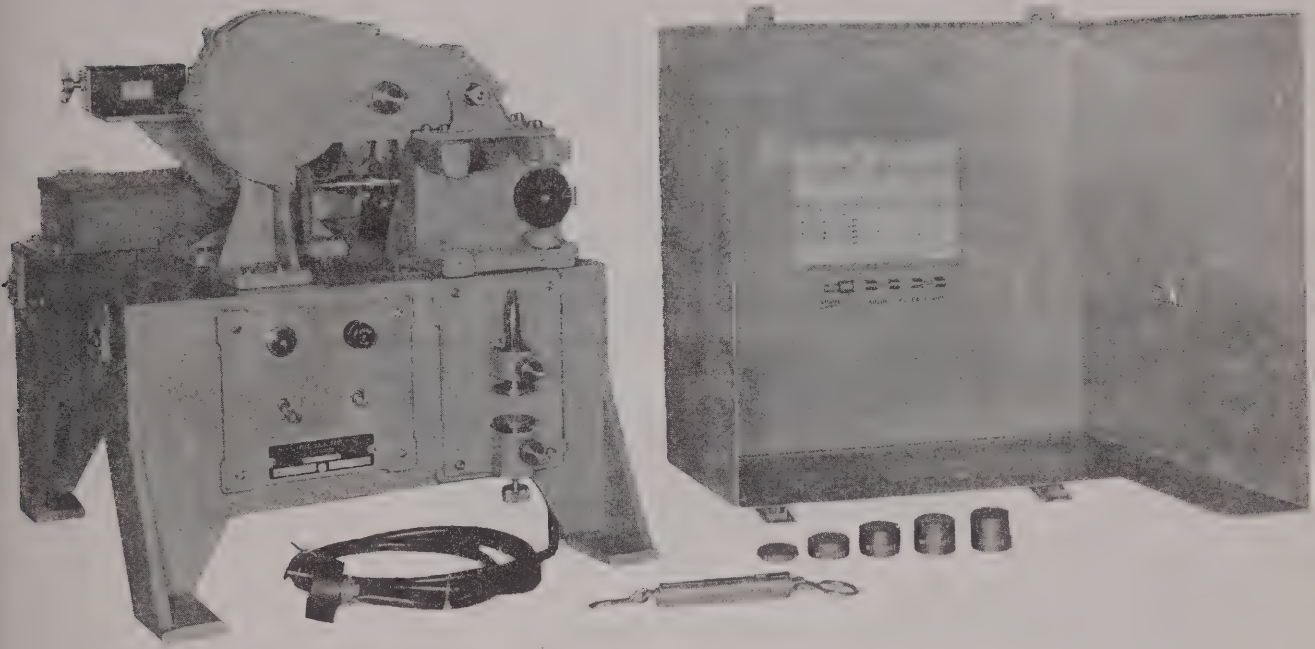
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Tester, Clutch Torque Sperry T-101065	Metal	7CSG-T101065	9-5/8	12-3/4	11	
	Including:						
3	Torque Wrench						
9	Coupling						
1	Plate						
1	Arm						
1	Shaft						
						Total:	7

FIXTURE, V.S.D. TEST
Part No. T-101071
(Sperry Gyroscope Company)



FUNCTIONAL DESCRIPTION:

The N-S, type B-2A, E-W Component Rate Unit Assembly, which is a subassembly of the tracking computer, contains the variable speed drive assembly. The tracking computer is a major component of the A-1A type Bombing-Navigational Computer.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The fixture circuit consists of a reversible motor driving a gear train. A system of movable gears provided five output speeds. The same motor drives the V.S.D. assembly under test and the outputs of both test fixture and V.S.D. assembly are mechanically compared in the differential of the test fixture. The amount of slippage in the V.S.D. assembly is recorded on a counter on the test fixture. A torque drum and an adjustable friction drag device is used

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-294521-95		
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.2	
	- Electronics Test Equipment -		Sperry T-101071

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U.S.A

FIXTURE, V.S.D. TEST
Part No. T-101071
(Sperry Gyroscope Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)

to simulate the same drag that the V. S. D. assembly would experience when mounted in the prime equipment. Five gage blocks are provided. These are intended to be placed, one at a time, between the discs of the displacement shaft of the gage block bracket assembly of the tester. This causes the ball carriage of the V.S.D. assembly to be displaced across the rotating disc of the V.S.D. assembly to the desired speed position. An "On-Off" switch and a reversing switch are provided for controlling the test fixture motor.

Power Supply: 115 volts, AC, 60 cycles per second, single-phase.

MANUFACTURERS' OR CONTRACTORS' DATA:

The Sperry Gyroscope Company, Division of Sperry-Rand Corporation, Great Neck, Long Island, New York; Contract No. AF 33(038)14787.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 33D5-5-64-1 (Operation and Service Instructions).
TO 33D5-5-64-4 (Illustrated Parts Breakdown).

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

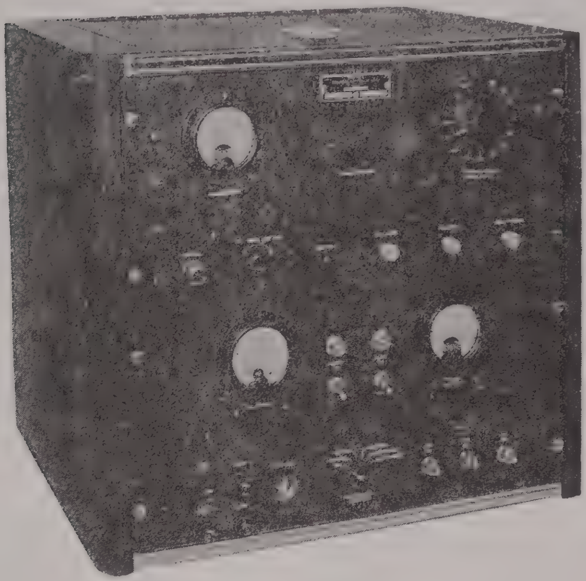
EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Fixture, V.S.D. Test (Sperry T-101071)		7CAC-294521-95	15-3/4	15-1/2	14-15/16	35

ANALYZER, PEDESTAL GENERATOR, I.C.E.

Part No. T-101075

(Sperry Gyroscope Company)



FUNCTIONAL DESCRIPTION:

A portable depot level tool used when performing a subassembly bench test of the pedestal generator of Radar Synchronizer SN-57/APQ-31. The analyzer supplies power and signal voltages to the pedestal generator under test, and provides a means of checking and adjusting the output of the pedestal generator. The signal voltages supplied by the analyzer are a radar bomb trigger, 2000 yard calibration marks, and a DC range voltage.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The analyzer is divided into two main assemblies; the lower panel and chassis assembly which contains the -150 volts, +150 volts, and + 300 volt DC power supplies; the upper panel and chassis assembly which contains the following electronic circuits necessary to supply the test signal voltages.

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-040250-5		
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.2	
[illegible]	- Electronics Test Equipment -	Sperry T-101075	

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U.S.A

ANALYZER, PEDESTAL GENERATOR, I.C.E.
Part No. T-101075
(Sperry Gyroscope Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)

(1) The calibration mark generator circuit produces a series of pips exactly 2000 yards apart which are used as a time reference in testing the pedestal generator and used to supply an input trigger to the bomb trigger generator circuit. (2) The bomb trigger generator circuit which produces a pulse every 1300 microseconds which is used to simulate the radar bomb trigger in a bench test of the pedestal generator. This bomb trigger is synchronized with the train of calibration marks. (3) The pedestal range circuit obtains, by means of an attenuator, a voltage corresponding to coarse slant range. This voltage delays the leading edge of the pedestal which is produced by the pedestal generator from the radar bomb trigger, by a time equivalent to coarse slant range.

Power Supply: 115 volts, AC, 400 cycles per second, single-phase.

Output Voltage: -150 volts regulated, +150 volts regulated, + 300 volts regulated, +300 volts unregulated, +450 volts unregulated.

MANUFACTURERS' OR CONTRACTORS' DATA:

Sperry Gyroscope Company, Division of the Sperry-Rand Corporation, Great Neck, Long Island, New York; Contract AF 33(038)14787.

TUBE COMPLEMENT:

1 JAN-12AU7, 3 JAN-2C51, 1 JAN-OB2, 1 JAN-6AS7G, 1 JAN-6Y6G, 1 JAN-5Y3GT, 1 JAN-5R4GY, 1 JAN-GL1641, 1 JAN-6AK6, 1 JAN-6AK5, 1 JAN-6AL5.

REFERENCE DATA AND LITERATURE:

TO 33D5-5-52-1 (Operation and Service Instructions).
TO 33D5-5-52-4 (Illustrated Parts Breakdown).

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

ANALYZER, PEDESTAL GENERATOR, I.C.E.

Part No. T-101075

(Sperry Gyroscope Company)

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Analyzer, Pedestal Generator, I.C.E. (Sperry T-101075)	Metal	7CAC-040250-5	19-3/4	21-1/2	16-1/4	30
1	Cable Assembly (Sperry T-101079-804)						

ANALYZER, PHASE SHIFT
Part No. T-101076
(Sperry Gyroscope Company)

FUNCTIONAL DESCRIPTION:

A portable depot level device which is used when performing a subassembly bench test on the phase shift unit of Radar Synchronizer SN-57/APQ-31. The analyzer supplies the power and signal voltages which the unit under test receives in normal operation, and provides a means of checking and adjusting the phase shift network of the unit as well as checking backlash in the gear train.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: A receptacle is located in the top of the analyzer for the purpose of receiving the unit to be tested. Two test probes are also located in the recess with the receptacle. All other operating controls are located on the front panel of the analyzer. A vacuum tube is used in conjunction with a crystal to act as a sine wave oscillator. The sine wave is then amplified and made available at output jacks for zero-degree and thirty-degree phase shift tests. A voltage which is varied by the motor control knob is available for the servo motor field.

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-040250-7		
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.2	
	- Electronics Test Equipment -		Sperry T-101076

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

ANALYZER, PHASE SHIFT
Part No. T-101076
(Sperry Gyroscope Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)

A synchro transformer is incorporated into the analyzer circuit to indicate the direction of rotation of the slant range synchro in the phase shift subassembly. Two probes are provided to check the amplifier gain of the unit under test. Each probe consists of a tube and associated circuitry. The input from the circuit under test is fed to the grid of the tube and the amplified signal is connected to the input of an oscilloscope. Backlash in the gear train of the unit under test may be checked by moving the servo motor pinion and observing the signal on the oscilloscope.

Power Supply: 115 volts, AC, 400 cycles per second, single-phase; 26.5 volts, DC.
Meter Ranges: 0 to 130 volts, AC; 0 to 30 volts, DC.

MANUFACTURERS' OR CONTRACTORS' DATA:

Sperry Gyroscope Company, Division of The Sperry-Rand Corporation, Great Neck, Long Island, New York; Contract No. AF 33(038)14787.

TUBE COMPLEMENT:

2 JAN-6SN7GT, 1 JAN-6V6, 1 JAN-5R4GY, 2 JAN-5977 (in probes).

REFERENCE DATA AND LITERATURE:

TO 33D5-5-66-1 (Operation and Service Instructions).
TO 33D5-5-66-4 (Illustrated Parts Breakdown).

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
1	Analyzer, Phase Shift Sperry T-101076	5.74	26	20	21	78

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Analyzer, Phase Shift (Sperry T-101076)	Aluminum	7CAC-040250-7	10-1/2	22-1/4	16	35

ANALYZER, I.C.E. RANGE AZIMUTH INDICATOR
Part No. T-101078
(Sperry Gyroscope Company)

FUNCTIONAL DESCRIPTION:

A special purpose test equipment designed to check the operation of the Range Azimuth Indicator IP-30/APQ-31 which is a component of the K-type Bombing Navigational System. The analyzer transmits range and azimuth sweeps, range and azimuth markers, and bomb video signals to the indicator. Facilities are provided for mounting the indicator inside the analyzer. A circular opening in the front panel of the analyzer provides a frame for the indicator cathode ray tube. Operation of the analyzer is monitored by two voltmeters and three indicator lamps mounted on the front panel of the analyzer.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: A power supply circuit rectifies and regulates the input supply to provide DC voltages for operation of the signal generator. The bomb video signal generator is composed of a free-running multivibrator, a delay multivibrator, and parallel-connected cathode followers.

The azimuth sweep generator contains a phase-shift oscillator and an amplifier. The sine wave developed in the phase-shift oscillator is amplified and

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-040560		
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.2	
	- Electronics Test Equipment -		Sperry T-101078

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U.S.A

ANALYZER, I.C.E. RANGE AZIMUTH INDICATOR
Part No. T-101078
(Sperry Gyroscope Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)

transmitted to the indicator as an azimuth sweep signal; it is also used to drive a current-interrupting relay which produces an azimuth mark signal.

The free-running multivibrator in the bomb-video signal generator provides an intensity gate signal which is used to drive a saw tooth generator. This generator produces the range sweep signal.

A high voltage power supply circuit provides operating voltages for the indicator cathode ray tube.

Power Supply: 115 volts, AC, 400 cycles per second, single-phase.
Internal Power Output: ±150 volts, DC, + 300 volts, DC; ± 2000 volts, DC.
Voltmeter Ranges: AC Meter: 0 to 130 volts, AC. DC Meter: 0 to 500 volts, DC.

MANUFACTURERS' OR CONTRACTORS' DATA:

Sperry Gyroscope Company, Division of the Sperry-Rand Corporation, Great Neck, Long Island, New York; Contract AF 33(038)14787.

TUBE COMPLEMENT:

1 JAN-1641; 1 JAN-5R4GY; 1 JAN-5Y3GT, 2 JAN-6AS7G; 1 JAN-6Y6G; 2 JAN-12AU7; 1 JAN-2C51; 1 JAN-OB2; 5 JAN-6J6; 2 JAN-1Z2; 1 JAN-12AT7; 1 JAN-6SN7GT.

REFERENCE DATA AND LITERATURE:

TO 33D5-5-68-1 (Operation and Service Instructions).
TO 33D5-5-68-4 (Illustrated Parts Breakdown).

SHIPPING DATA:

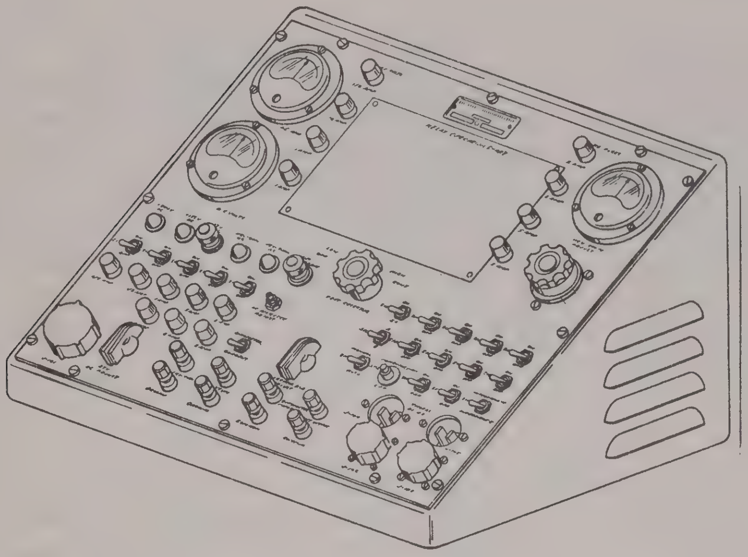
No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
Sperry T-101078	- Electronics Test Equipment -					

ANALYZER, I.C.E. RANGE AZIMUTH INDICATOR
Part No. T-101078
(Sperry Gyroscope Company)

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Analyzer, I. C. E. Range Azimuth Indicator (Sperry T-101078)		7CAC-040560	21-7/8	15-3/4	15-3/16	65

SA, CA, AND TURN GENERATOR FIXTURE
Part No. T-101278
(Sperry Gyroscope Company)



FUNCTIONAL DESCRIPTION:

A portable, depot level, interconnecting device which provides and measures power, excitation voltage, and simulated error signals to the stabilization amplifier and/or computer amplifier of the type A-1A Bombing Navigational Computer. It is used to check the turn generator, the Haydon timers and the bomb bay door holding circuit. The checks include continuity, resistance, transformer output voltage, potentiometer phasing, relay pull-in and drop-out voltages, timing circuit checks, and turn generator operation.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: This equipment consists of five basic circuits: (1) The Transformer Output, Continuity, and Resistance Checking Circuit which provides current for the excitation of transformers and potentiometers, a one-ampere current for checking continuity, and a means for measuring resistance and transformer output voltages on an externally connected multimeter. (2) The Relay Pull-in Voltage Checking Circuitry which provides a variable DC voltage. The voltage is increased to determine the pull-in voltage of the relays under test, and de-

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-809687		
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.2	
	- Electronics Test Equipment -		Sperry T-101278

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U.S.A.

SA, CA, AND TURN GENERATOR FIXTURE
Part No. T-101278
(Sperry Gyroscope Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)

creased to determine the drop-out voltage. (3) The Bomb Bay Door Holding Checking Circuitry which energizes the bomb bay door holding circuit in the computer amplifier and times the holding interval. (4) The Haydon Timer Checking Circuitry which provides the means for starting the Haydon timer on the rack of the stabilization amplifier and for timing the Haydon timer cycle. (5) The Turn Generator Checking Circuitry which provides means for driving the turn generators in the stabilization amplifier by an external error signal, means for monitoring the driving signal, and means for driving the turn generators to their synchro nulls.

Power Supply: 115 ± 6 volts, AC, 60 cycles per second, single-phase; 115 ± 6 volts, AC, 400 cycles per second, single-phase; 27 ± 0.5 volts, DC, with minimum capacity of 3 amperes; + 175 ±3.5 volts, regulated DC with a minimum capacity of 50 milliamperes; +300 ±6 volts, regulated DC with a minimum capacity of 100 milliamperes; all supplied by Power Supply Junction Box T-101126.

MANUFACTURERS' OR CONTRACTORS' DATA:

Sperry Gyroscope Company, Division of the Sperry-Rand Corporation, Great Neck, Long Island, New York; Contract AF 33(038)14787.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 33D5-5-83-1 (Operation and Service Instructions).
TO 33D5-5-83-4 (Illustrated Parts Breakdown).

SHIPPING DATA:

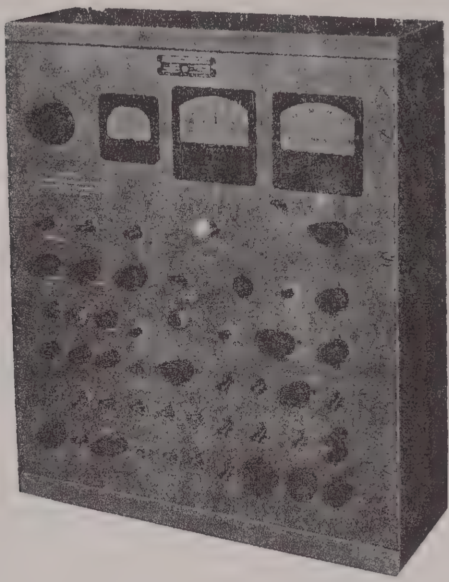
No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
Sperry T-101278	- Electronics Test Equipment -					

SA, CA, AND TURN GENERATOR FIXTURE
Part No. T-101278
(Sperry Gyroscope Company)

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	SA, CA, and Turn Generator Fixture (Sperry T-101278)	Metal	7CAC-809687	10-1/2	21-1/2	15-1/2	37

SAFETY MONITOR AMPLIFIER ANALYZER
Part No. 1000132
(Sperry Gyroscope Company)



FUNCTIONAL DESCRIPTION:

A portable analyzer which is used with rate signal generating equipment for functionally testing and calibrating safety monitor amplifiers and for testing specially selected 6AG5 type tubes that are utilized in safety monitor amplifiers.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The circuit consists of three voltmeters, transformers, potentiometers, selector switches, indicator lights, and other components which provide signal generating and metering functions. The analyzer is connected to the unit under test by means of cables and receptacles. Switches and potentiometers on the front panel of the analyzer permit the selection of various indivicual circuits for measuring and testing. The operational quality of the unit under test is indicated by means of the meters which are located on the front panel of the analyzer. The analyzer is used for the following purposes: (1) for testing the grid, filament, microphonic, and plate amplification characteristics of the special 6AG5 tube; and (2) for safety monitor amplifier tests including power consumption, demodulator balance, demodulator gain and phase sensitivity, relay tube standby

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.			
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.2	
	- Electronics Test Equipment -		Sperry 1000132

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U.S.A.

SAFETY MONITOR AMPLIFIER ANALYZER
Part No. 1000132
(Sperry Gyroscope Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)

level, accelerometer channel input signal pulsation, and servo channel input signal pulsation.

Power Supply: 115 volts, AC, 400 cycles per second, single-phase; 27.5 volts, DC.

MANUFACTURERS' OR CONTRACTORS' DATA:

Sperry Gyroscope Company, Division of the Sperry-Rand Corporation, Great Neck, Long Island, New York.

TUBE COMPLEMENT:

1-JAN-6X4, 1-JAN OA2.

REFERENCE DATA AND LITERATURE:

TO 33D3-2-10-1 (Instructions and Parts Breakdown).

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

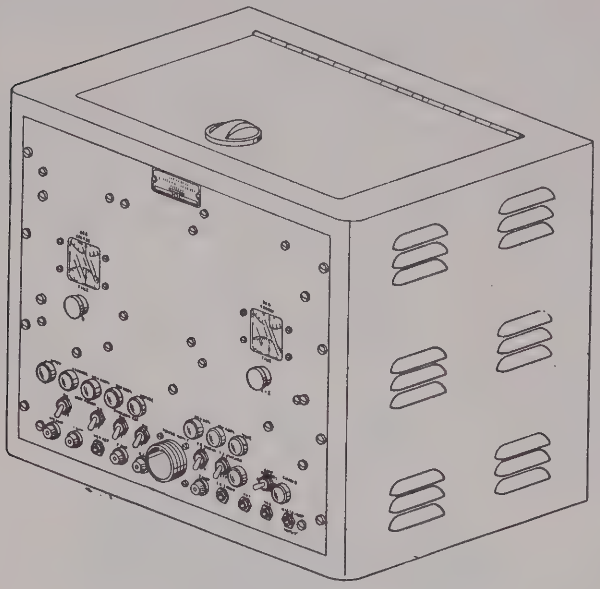
EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	

POLAR NAVIGATION CONTROL ANALYZER

Part No. 1000179

(Sperry Gyroscope Company)



FUNCTIONAL DESCRIPTION:

A portable analyzer used in bench testing of the polar navigation control, a major component of the A-1A and ME-5 Bombing Navigational Computer. It supplies data to the polar navigation control which is usually supplied by the periscopic bombsight stabilizer tracking control and polar converter.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The circuitry consists of three major assemblies: (1) The Earth Rate Transmitter consists of the earth rate motor, earth rate synchro, and the earth rate error synchro. It supplies electrical data to the earth rate synchro of the polar navigation control. (2) The Azimuth Transmitter Assembly consists of coarse and fine synchros, coarse and fine indicating dials, and appropriate gearing. Electrical data from the azimuth transmitter is either supplied directly to the azimuth and polar angle synchros or impressed upon the stator of the differential synchro of the polar navigation control. (3) The Azimuth and Polar Angle Assembly consists of the coarse and fine "$\Phi + \delta$" synchros, a DC servo motor,

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-040250-85		
PROCUREM'T INFO.:			
PROCUREM'T COG.:	DESIGN COG.: Commercial		
F.I.I.N.:	FUNCTIONAL CLASS. NO.: 10.2		
- Electronics Test Equipment -		Sperry 1000179	

his project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

POLAR NAVIGATION CONTROL ANALYZER
Part No. 1000179
(Sperry Gyroscope Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)

MAH type amplifier, limiter, indicator dials, and appropriate gearing. It provides coarse and fine angle readings.

Power Supply: +175 volts, DC; +300 volts, DC; +27 volts, DC; 6.3 volts, AC, 400 cycles per second, single-phase; 115 volts, AC, 400 cycles per second, single-phase; 40 volts, AC, 400 cycles per second, single-phase; 26 volts, AC, 400 cycles per second, single-phase; 10 volts, AC, 400 cycles per second, single-phase; and 115 volts, AC, 60 cycles per second, single-phase; all supplied by Power Supply Junction Box T-101126.

MANUFACTURERS' OR CONTRACTORS' DATA:

Sperry Gyroscope Company, Division of the Sperry-Rand Corporation, Great Neck, Long Island, New York.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 33D5-5-54-1 (Operation and Service Instructions).
TO 33D5-5-54-4 (Illustrated Parts Breakdown).

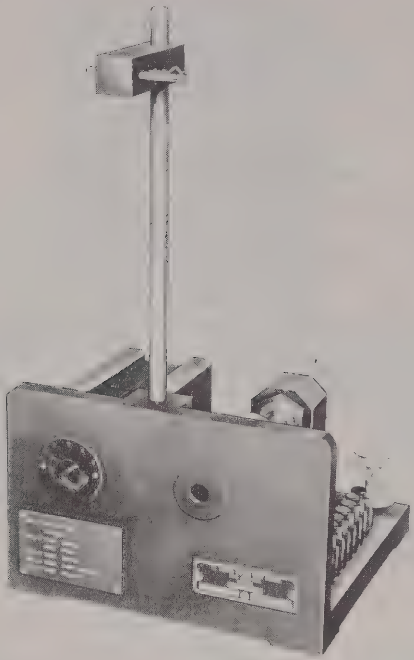
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Polar Navigation Control Analyzer (Sperry 1000179)	Metal	7CAC-040250-85	16-1/2	22-1/8	16	50

AC SERVO MOTOR TEST STAND AND ADAPTER
(Test Stand and Adapter, AC Servo Motor)
Part No. 1000181
(Sperry Gyroscope Company)



FUNCTIONAL DESCRIPTION:

A portable maintenance tool which is used at depot level to provide a means of testing the AC motor and AC tachometer. This is a component of the A-1A and ME-5 Bombing-Navigational Computer. The test stand acts as a mounting device for the motor and tachometer assembly. Typical operational tests performed on the AC motor are direction-of-rotation tests, allowable friction test, free speed, and stalled torque tests. Tests on the AC tachometer include output voltage, null voltage and tachometer polarity tests. The test stand and adapter is normally used in conjunction with the AC servo control panel.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The test stand consists of a base and panel assembly upon which are mounted a mast for suspending a spring scale, a rotary type selector switch, a terminal board, and a screw clamp for holding the unit in the test stand. The selector switch supplies the motor and tachometer unit under test with the proper voltage combinations required to perform the various operational tests.

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-801354		
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.N.:		FUNCTIONAL CLASS. NO.:	10.2
	- Electronics Test Equipment -		Sperry 1000181

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

AC SERVO MOTOR TEST STAND AND ADAPTER

(Test Stand and Adapter, AC Servo Motor)
Part No. 1000181
(Sperry Gyroscope Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)

The leads of the unit under test are attached to the terminal board. A vacuum tube voltmeter connects to the terminal board to provide operational readings. A power plug connects the test stand to the AC servo control panel to supply regulated power.

Power Supply: 115 volts, AC, 400 cycles per second, single phase;
26 volts, AC, 400 cycles per second, single phase.
Both voltages are maximum input and are variable.

MANUFACTURERS' OR CONTRACTORS' DATA:

Sperry Gyroscope Company, Division of the Sperry-Rand Corporation, Great Neck, Long Island, New York; Contract No. AF 33(600)6565.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 33D5-5-91-1 (Operation and Service Instructions).
TO 33D5-5-91-4 (Parts Breakdown).

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	AC Servo Motor Test Stand and Adapter (Sperry 1000181)	Steel	7CAC-801354	18 (assembled)	9-3/4	11-3/4	
1	Carrying Case			8-9/16	11-5/8	12-3/4	
						Total:	10

ANALYZER, AUTOPILOT AMPLIFIER
Part No. 1, 000, 309
(Sperry Gyroscope Company)

FUNCTIONAL DESCRIPTION:

This is a portable depot level test instrument used for testing Amplifiers, Sperry Part Nos. 610751 and 686639, which are components of the Sperry Model A-14 Automatic Pilot.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The analyzer provides an input signal for testing the amplifiers. This signal can be adjusted with respect to phase and voltage in order to simulate the input signal that is normally applied to the amplifier. The analyzer also provides the AC and DC power required for the amplifier operation and checks the voltage and polarity of the amplifier output.

The analyzer panel contains an AC voltmeter, a DC voltmeter which by the use of additional circuitry in the chassis, will also indicate milliamperes, four synchro calibrating dials, fourteen rotary switches, fifteen toggle switches, thirteen potentiometers, eight jacks, four receptacles, five lamps, and two fuses.

The AC voltmeter indicates the amount of AC excitation to the amplifier. The DC voltmeter indicates the servo amplifier output voltage. The synchro calibrating dials are used to set the internal synchros of the tester to generate the desired

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.			
PROCUREM'T INFO.:			
PROCUREM'T COG.:	DESIGN COG.: Commercial		
F.I.I.N.:	FUNCTIONAL CLASS. NO.: 10.2		

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U.S.A.

ANALYZER, AUTOPILOT AMPLIFIER
Part No. 1,000,309
(Sperry Gyroscope Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)

simulated gyro signals. The potentiometers are used to control the voltages of the input signals to the amplifiers. The rotary and toggle switches are used to select the various test circuits and test functions necessary in checking the amplifiers.

Power Supply: 115 ± 5 volts, AC, 400 ± 5 cycles per second, single-phase. 27.5 ± 0.5 volts, DC.

AC Voltmeter Range: 0 to 50 volts.

DC Voltmeter Ranges: 0 to 100 volts, 0 to 30 milliamperes.

Receptacles: AN type.

MANUFACTURERS' OR CONTRACTORS' DATA:

Sperry Gyroscope Company, Division of Sperry-Rand Corporation, Great Neck, Long Island, New York; Contract AF 33(038)21096.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 33D3-2-9-1 (Instructions and Parts Breakdown).

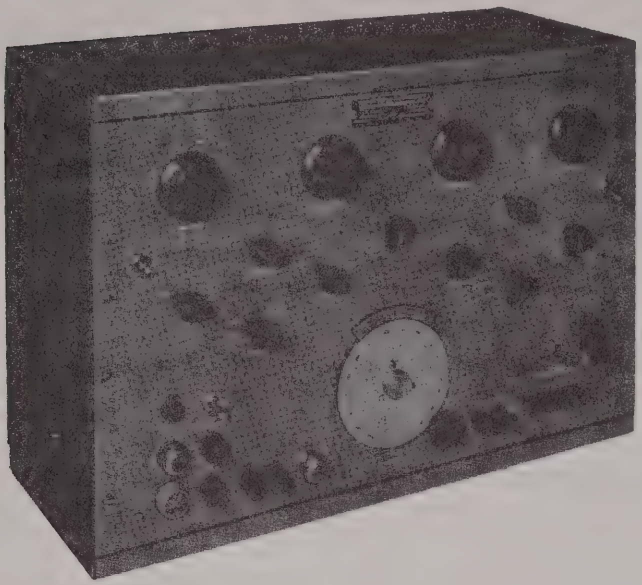
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Analyzer, Autopilot Amplifier (Sperry 1000309)			23	19-1/2	11	50
1	Cable (Sperry 602702)						
1	Cable (Sperry 602690)						
1	Cable (Sperry 602706)						

ANALYZER, TURN GENERATOR
Part No. 1000323
(Sperry Gyroscope Company)



FUNCTIONAL DESCRIPTION:

This is a portable general purpose instrument designed for testing turn generators.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The analyzer circuit contains selector switches, toggle switches, variable transformers, a synchro, and synchro loads. The panel mounts the following switches: (1) a generator resistor selector switch, (2) a motor control field selector switch, (3) two synchro voltage selector switches, (4) a DC circuit switch, (5) a synchro simulator switch, (6) a motor fixed field switch, (7) a polarity selector switch, (8) a synchro load selector switch, (9) a switch for selecting the excitation voltage to be measured, (10) a switch for selecting the output voltage to be measured, (11) a switch for selecting either excitation or output voltage for measurement, (12) an on-off power switch.

A vernier dial on the panel is directly connected to an internal synchro. A knob is provided to adjust this dial to the desired simulator synchro input value. Output jacks on the panel permit plugging in external meters for voltage measurements.

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-043542		
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.2	
	- Electronics Test Equipment -		Sperry 1000323

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

ANALYZER, TURN GENERATOR
Part No. 1000323
(Sperry Gyroscope Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)

Power Supply: 115 volts, 400 cycles per second, AC, single-phase, 0.5 ampere; 28 volts, DC, 0.5 ampere.

MANUFACTURERS' OR CONTRACTORS' DATA:

Sperry Gyroscope Company, Division of the Sperry-Rand Corporation, Great Neck, Long Island, New York; Contract AF 33(038)21096.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 33D3-4-16-1 (Instructions and Parts).

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Analyzer, Turn Generator (Sperry 1000323)	Metal	7CAC-043542	13-3/4	19-1/8	8	40
	Including:						
1	Cable (Sperry 609618)						
1	Cable (Sperry 609619						
1	Cable (Sperry 609620)						

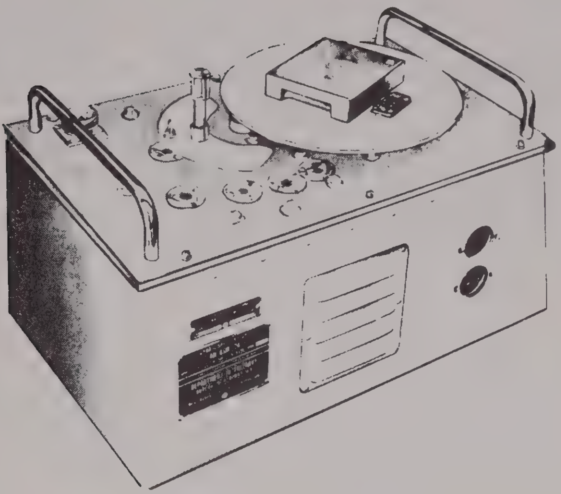
(Continued)

ANALYZER, TURN GENERATOR
Part No. 1000323
(Sperry Gyroscope Company)

EQUIPMENT SUPPLIED: (Continued)

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Cable (Sperry 609621)						
1	Cable (Sperry 609622)						
1	Cable (Sperry 609623)						
1	Cable (Sperry 612343)						
1	Cable (Sperry 612344)						
1	Cable (Sperry 612345)						
1	Cable (Sperry 612346)						
1	Cable (Sperry 612347)						

GYROSCOPE TEST SET AN/ASM-2A



FUNCTIONAL DESCRIPTION:

A general purpose equipment used to calibrate the output of the omega servo amplifier of antennas AS-459/APG-26, AS-565/APQ-41, and AS-598/APG-26. The instrument is used to calibrate the servo amplifier in degrees per second while the gyroscope is mounted either on the antenna or on the test set turntable. Test results are calculated from readings obtained from meters located on the front panel of control indicator.

RELATIONSHIP TO OTHER EQUIPMENT:

Cables for connecting external power to the test set and a cable for connecting the test set to the gyroscope on the antenna are required but not supplied.

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The test set is comprised of an electrical test stand and a control-indicator unit. The rate gyroscope is mounted on the turntable of the test stand during test. The rotational speed of the turntable is controlled by

	AIR FORCE	NAVY	ARMY
TYPE CLASS.		Standard	
STOCK NOS.		R16AN-ASM2A RCP(ASO)	
PROCUREM'T INFO.:		R16AN-ASM2A WX (ASO)	
PROCUREM'T COG.: Navy		DESIGN COG.: Navy, BuAer	
F.I.I.N.: 6625-093-5508		FUNCTIONAL CLASS. NO.: 10.2.1	
	- Electronics Test Equipment -		AN/ASM-2A

GYROSCOPE TEST SET AN/ASM-2A

ELECTROMECHANICAL DESCRIPTION: (Continued)

stepping up the 5-volt output of a 400-cycle standard oscillator to a level sufficient to operate a 400-cycle synchronous motor which drives the turntable. The synchronous speed of the motor is 12,000 revolutions per minute. Means are provided to check the rate gyroscope while the turntable is at a standstill, or rotating either clockwise or counterclockwise. The control-indicator contains the power supplies for operation of the equipment, an omega amplifier and a nulling circuit.

Power Supply: 115 volts, AC, 50 to 1000 cycles per second; 26 volts DC.
Meter Range: 50 to 0 to 50 milliamps DC, 2 to 100 milliamps DC; 0 to 80 volts DC.
Turntable Rotational Speeds: 5, 10, 15, 30 or 45 degrees per second.
Turntable Rotational Accuracy: ±0.01%.

MANUFACTURERS' OR CONTRACTORS' DATA:

Westinghouse Electric Company, Baltimore 3, Maryland; Contract No. NOas 12131, NOas 12145. Radio City Products, Incorporated, 152 West 25th Street, New York, New York; Contract No. N383(S)-1238A; Approximate Cost per Unit, $2 820.00.

TUBE COMPLEMENT:

1 12AU7, 4 6AQ5, 2 811A, 3 6AS7, 1 12AX7, 1 OB2, 2 6X4, 2 OA2, 2 5651, 1 6AK5, 1 12AT7.

REFERENCE DATA AND LITERATURE:

AN 16-30ASM2-1, Handbook Operation and Service Instructions.

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
	Gyroscope Test Set AN/ASM-2					

GYROSCOPE TEST SET AN/ASM-2A

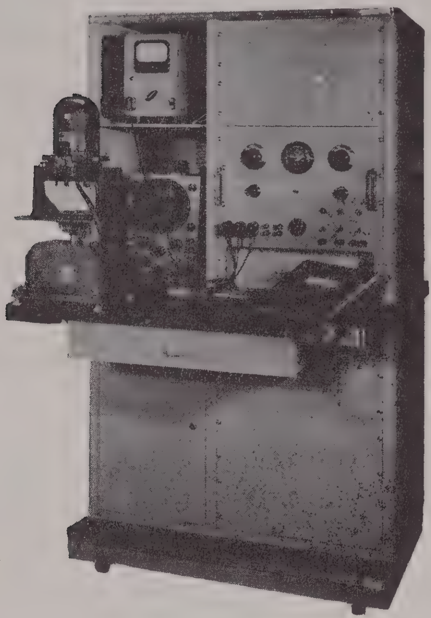
EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Gyroscope Test Set AN/ASM-2 Including:						
1	Control-Indicator C-990A/ASM-2	aluminum					
1	Control-Indicator Transit Case CY-1374/ASM-2A			17-1/2	19-1/2	26-1/2	
1	Electrical Test Stand MK-79A/ASM-2	aluminum		15-1/2	15	29	
1	Electrical Test Stand Transit Case CY-1375/ASM-2A						
1	Cable			36 long			
1	Cable			72 long			
1	Cable			12 long			

TEST SET, ROLL & PITCH CONTROL

Part No. 210743

(Cal-Tronics Corporation)



FUNCTIONAL DESCRIPTION:

A transportable special purpose test set used to provide a complete functional test of the Roll and Pitch Control, North American Aviation 14138-506. The roll and pitch control is a component of the MG-4 Fire Control System. The functional test of the roll and pitch control is accomplished by observing the response of the gyro transmitting synchros as the control case is displaced by a measured angle from the vertical. The control is also subjected to a standard scorsby test to determine the reliability of the vertical indication. The test results, voltage phases and amplitudes are measured by an oscilloscope and vacuum tube voltmeter included with the test set.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The test set circuitry consists of three synchro transformers; a master synchro, a pitch indicator synchro, and a roll indicator synchro. A nineteen-position circuit selector switch and a four-position gyro control switch are mounted on the panel. In any given position of the circuit selector switch,

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.			
PROCUREM'T INFO.:			
PROCUREM'T COG.:	DESIGN COG.: Commercial		
F.I.I.N.:	FUNCTIONAL CLASS. NO.: 10.2.1		
	- Electronics Test Equipment -		Cal-Tronics 210743

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

TEST SET, ROLL & PITCH CONTROL
Part No. 210743
(Cal-Tronics Corporation)

ELECTROMECHANICAL DESCRIPTION: (Continued)

each respective switch deck monitors or selects information from the test set synchros for presentation to the gyro. It also selects appropriate leads for phase and voltage measurements. The gyro control switch starts the gyro motor and controls the erection rate of the gyro.

Power Supply: 115 volts, AC, 60 cycles per second, single-phase, 3 amperes; 115 volts, AC, 400 cycles per second, single-phase, 0.5 ampere; 28 volts, DC, 1 ampere.

Voltage Output: 28 volts, AC, 400 cycles per second; 115 volts, AC, 400 cycles per second.

MANUFACTURERS' OR CONTRACTORS' DATA:

Cal-Tronics Corporation, 11307 Hindry Avenue, Los Angeles 45, California; Contract AF 33(600)26479; Approximate Cost per Unit, $8,000.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

Instructions and Operating Manual, Roll and Pitch Control Set, Cal-Tronics 210743.

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Test Set, Roll and Pitch Control, Cal-Tronics 210743			67	37	44	
	Including:						
1	Test Panel Cal-Tronics 10804						
1	Power Outlet Panel, Cal-Tronics 10734						

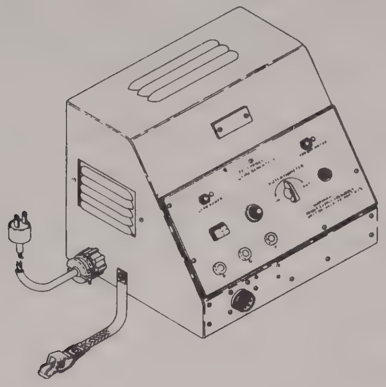
(Continued)

TEST SET, ROLL & PITCH CONTROL
Part No. 210743
(Cal-Tronics Corporation)

EQUIPMENT SUPPLIED: (Continued)

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Oscilloscope DuMont 304A						
1	VTVM H.P.400D						
1	Scorsby Table Ideal # 1411						
1	Gyro Tilt Table Cal-Tronics 13036						
1	Set Cables						
	Including:						
1	Cable to Unit Under Test						
3	Power Cable						
3	Test Cable						

PANEL, GYRO TEST BENCH
Part No. 141D617G1
(General Electric Company)



FUNCTIONAL DESCRIPTION:

This test panel is designed to be used in bench testing a gyro. Torque and gyro motor power are provided by the panel to the gyro under test which in turn provides a return pickoff signal to the test panel. An externally connected VTVM, strobotac, and microammeter are used as measuring devices in the equipment circuit. Test functions include gyro rotation polarities, stop adjustment, spring torque, reluctance torque, friction and dynamic balance, and direction.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: Direct current from an internal battery is controlled by a dual potentiometer and delivered to the gyro for testing torque motor action. Rotating the potentiometer will cause the moving coil to enter the magnet housing of the torque motor. Reversing the rotation of the potentiometer will cause the coil to reverse direction of travel thus verifying the operating response of the coil.

In testing the gyro motor, the gyro is connected to the bench test set and the gyro power switch turned on. A strobotac plugged into the proper jacks on the test panel will permit checking the time required to come to synchronous speed and the speed of rotation.

In testing the pickoff coil, torque and gyro motor power is supplied to the gyro by the test panel. The returning pickoff signal induced by the gyro motor arma-

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-801317-532		
PROCUREM'T INFO.:			
PROCUREM'T COG.:	DESIGN COG.: Commercial		
F.I.I.N.:	FUNCTIONAL CLASS. NO.: 10.2.1		
	- Electronics Test Equipment -	Gen. Elec. 141D617G1	

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC.- Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A

PANEL, GYRO TEST BENCH
Part No. 141D617G1
(General Electric Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)
ture displacement is then routed by the test panel to externally connected VTVM and microammeter which are used as measuring devices and complete the equipment circuit.
Power Supply: 115 volts, AC, 400 cycles per second, single-phase.

MANUFACTURERS' OR CONTRACTORS' DATA:
General Electric Company, 1 River Road, Schenectady, New York.

TUBE COMPLEMENT:
None.

REFERENCE DATA AND LITERATURE:
TO 33D5-7-4-1 (Operation and Service Instructions).

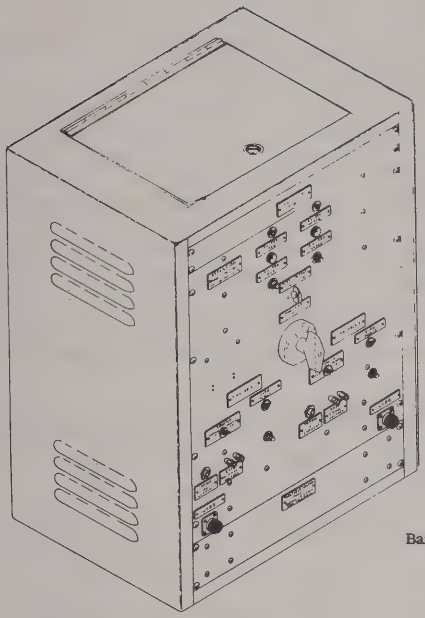
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

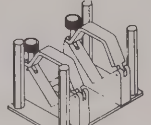
EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Panel, Gyro Test Bench (General Electric 141D617G1)		7CAC-801317-532	7-7/8	10-1/4	8	

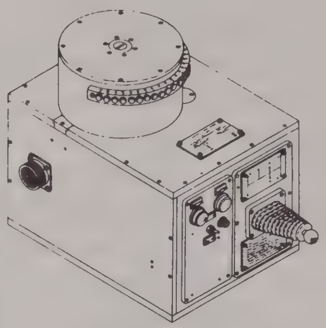
TURNTABLE, TEN SPEED
Part No. 519E645G1
PANEL, TURNTABLE CONTROL
Part No. 141D618G1
FIXTURE, BAND SETTING
Part No. 141D283G1
(General Electric Company)



Turntable Control Panel



Band Setting Fixture Assembly



Turntable, 10-Speed

FUNCTIONAL DESCRIPTION:

These units are components of an instrument testing group used in testing gyro torque motor current. The gyro under test is secured to the turntable by means of the band setting fixture. The turntable is designed to subject the gyro to any one of ten rotative speeds in either clockwise or counterclockwise direction. Power to operate the gyro motor and torque motor is derived from the turntable control panel which houses amplifier and power supply units.

The signal induced by the gyro is fed to the turntable control panel for amplification. The control panel provides external jacks to permit connection to an external ammeter for reading of torque motor current.

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	see eq'pt. supplied		
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.2.1	
	- Electronics Test Equipment -		G. E. 519E645G1 G. E. 141D618G1 G. E. 141D283G1

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U.S.A.

TURNTABLE, TEN SPEED
Part No. 519E645G1
PANEL, TURNTABLE CONTROL
Part No. 141D618G1
FIXTURE, BAND SETTING
Part No. 141D283G1
(General Electric Company)

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The reversal of turntable direction is accomplished by reversing the current phase to the internal drive motor. The connecting cable to the turntable control panel delivers the power for gyro motor and torque motor, and returns the gyro signal to the control panel. The control panel houses two independently wired precession amplifiers and associated power supplies. This duplication of electrical components and corresponding panel controls is for the purpose of accommodating two turntable tests.

The input signal is delivered to the external meters after passing through two AC amplification stages, a discriminator stage, a filter network, and a power amplification output stage.

The power supply assembly is of conventional design but highly regulated.

Power Supply: Turntable -115 volts, AC, 60 cycles per second, single-phase.
Control Panel - 115 volts, AC, 400 cycles per second, single-phase.
Permissible Voltage Variation ±0. 1%.

Turntable Gearing: The various turntable speeds are obtained by gearing. Moving the selector lever actuates four internal forks which raise or lower various gears and change the path of gear mesh or train.

Turntable Speeds: 1, 3, 5, 15, 30, 45, 60, 90, 135 and 180 degrees per second.

MANUFACTURERS' OR CONTRACTORS' DATA:

General Electric Company, 1 River Road, Schenectady, New York.

TUBE COMPLEMENT:

Turntable: None.
Fixture: None.
Control Panel: Amplifier - 3 JAN-12AU7, 2 JAN-6AQ5.
Power Supply -3 JAN-5Y3, 5 JAN-6X4, 3 JAN-6AQ5, 2 JAN-6AK5, 1 JAN-12AX., 2 JAN-OB2, 1 JAN-OA2 and 1 JAN-5651.

REFERENCE DATA AND LITERATURE:

TO 33D5-7-4-1 (Operation and Service Instructions).

TURNTABLE, TEN SPEED
Part No. 519E645G1
PANEL, TURNTABLE CONTROL
Part No. 141D618G1
FIXTURE, BAND SETTING
Part No. 141D283G1
(General Electric Company)

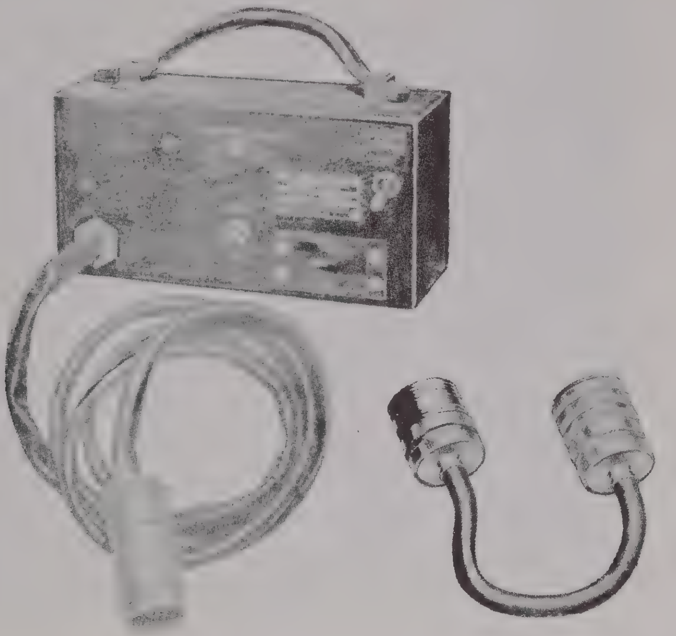
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock (USAF) Numbers (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Turntable, Ten Speed (General Electric 519E645G1)		7CAD-901648	14-1/2	11-1/2	12-1/2	
1	Panel, Turntable Control (General Electric 141D618G1)		7CAD-618500-5	28-1/4	21-1/2	15	
1	Fixture, Band Setting (General Electric 141D283G1)		8025-141D283G1	5-1/2	5-1/2	5-1/4	

LEAD CHECKER
Part No. 9161931G1
(General Electric Company)



FUNCTIONAL DESCRIPTION:

A portable test equipment designed to provide a means of moving the azimuth and elevation gyro drive units at a constant and definite rate to check the lead prediction accuracy of the A-5, MD-1, and MD-3 Fire Control Systems.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

The equipment includes a small DC motor, a fixed rotor selsyn, a movable rotor selsyn and clutch, two toggle switches and a circuit selector switch. The motor drives the rotor of the movable rotor selsyn, which sends a signal to the turret system, causing the gyro platform to be moved at a constant rate of six degrees per second. This steady movement of the gyro sends a constant lead signal to the computer. The fixed rotor selsyn transmits a signal which holds the turret at a constant elevation while the azimuth lead prediction is being checked, **and at a**

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-468580		
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.2.1	
	- Electronics Test Equipment -		G. E. 9161931G1

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

LEAD CHECKER
Part No. 9161931G1
(General Electric Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)
constant azimuth when the elevation lead is being checked.
Power Supply: 27 volts, DC, furnished by a separate power supply.

MANUFACTURERS' OR CONTRACTORS' DATA:
General Electric Company, 1 River Road, Schenectady, New York.

TUBE COMPLEMENT:
None.

REFERENCE DATA AND LITERATURE:
TO 33D5-7-6-1 (Operation and Service Instructions).
TO 33D5-7-6-4 (Parts Catalog).

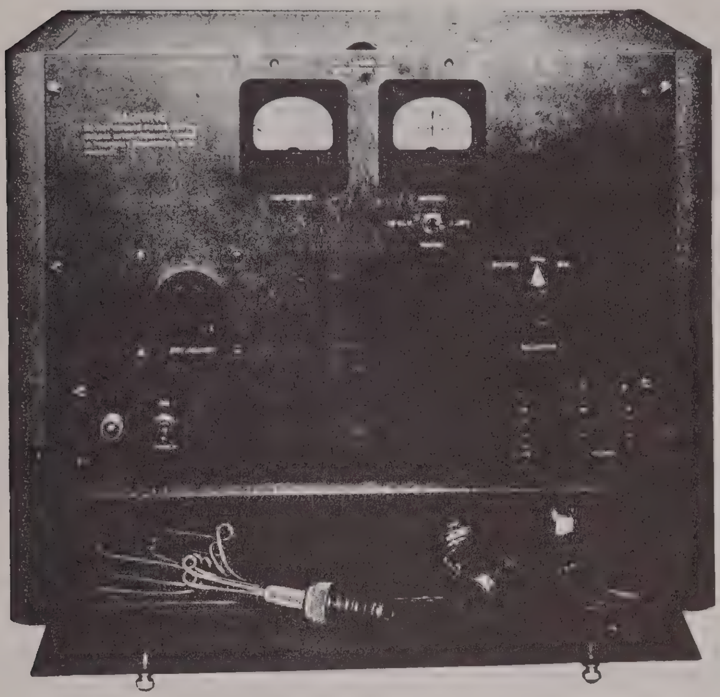
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Lead Checker (G.E. 9161931G1)		7CAC-468580	5	9	5	
1	Adapter Cable Assembly (9785632G1)						

TEST PANEL, RATE GYRO
Part No. LT-3213
(Lear, Incorporated)



FUNCTIONAL DESCRIPTION:

A portable, special purpose instrument designed to test the operation of rate gyros in the Model 1500 series Damper Control Assemblies.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The test panel basically consists of a power supply, a three stage resistance coupled amplifier, and a phase discriminator circuit. The instrument is provided with two panel meters for indicating the reference voltage and the output voltage of the rate gyro under test. Terminals are provided for connection of a vacuum-tube voltmeter and an oscilloscope for phase indications. Power for the gyro under test is supplied by the test panel.

Power Supply: 110 to 120 volts, AC, 400 ±4 cycles per second, three phase.

Reference Indicator: 0 to 50 volts, AC, 400 cycles per second.

Output Indicator: 0.025 to 0 to 0.025 and 1.25 to 0 to 1.25 volts, DC.

	AIR FORCE	NAVY	ARMY
TYPE CLASS.		Standard	
STOCK NOS.		(ASO)R88LA-LT-3213	
PROCUREM'T INFO.:			
PROCUREM'T COG.: Navy		DESIGN COG.:	Commercial
F.I.I.N.: 4920-547-0617		FUNCTIONAL CLASS. NO.:	10.2.1
	- Electronics Test Equipment -		Lear LT-3213

TEST PANEL, RATE GYRO
Part No. 3213
(Lear, Incorporated)

MANUFACTURERS' OR CONTRACTORS' DATA:
Lear, Incorporated, 1480 Buchanan Avenue, Grand Rapids, Michigan; Contract No. NOas 56-797f; Approximate Cost per Unit, $545.00.

TUBE COMPLEMENT:
1 JAN-6X4, 1 JAN-OA2, 2 12AU7, 1 JAN-6C4, 1 JAN-6AL5.

REFERENCE DATA AND LITERATURE:
NavAer 17-15KD-502 (Operation and Service Instructions).

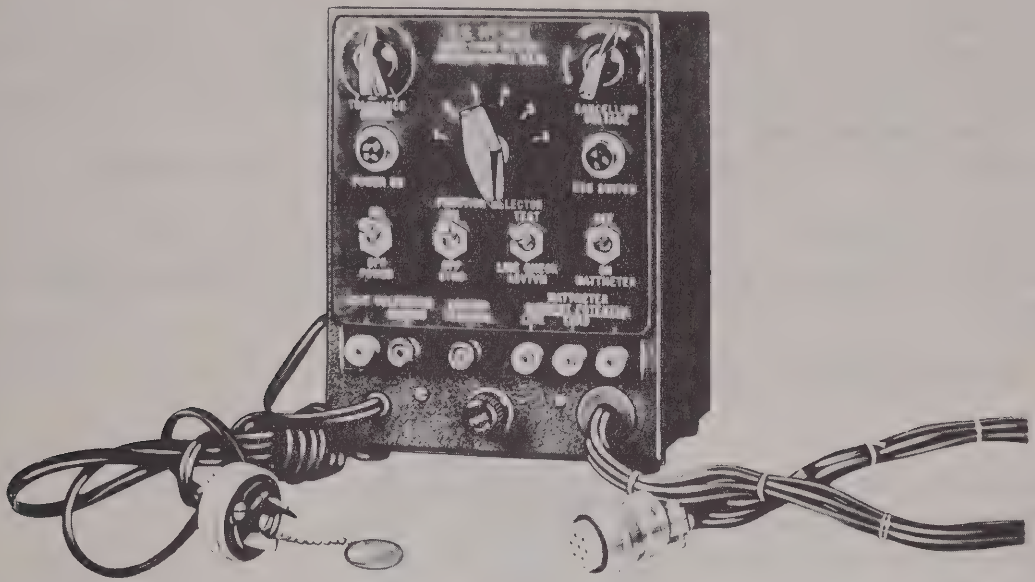
EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Test Panel, Rate Gyro Lear, LT-3213	metal		19-1/2	10-1/2	16	

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
1	Test Panel, Rate Gyro Lear LT-3213		23-1/4	15-3/8	18	67

TESTER, RATE GYRO CALIBRATING
Part No. HT 163A
(Minneapolis-Honeywell Regulator Company)



FUNCTIONAL DESCRIPTION:

A special purpose portable overhaul and maintenance tool for electrically testing the JG 7005A series of Rate Gyros. The tester is used for presetting or readjusting the sensing and control elements of the gyros to obtain required performance. The circuit of the tester permits measurement of gyro power consumption.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: This tester is used in conjunction with a turntable and a calibrating plate to determine if certain adjustments made on the gyro cause it to operate within the limits of its specifications. Connections are made between the tester and the unit under test by means of electrical cables with receptacles and polarized plugs. The tester contains a bridge transformer, a bridge network of fixed resistors, several potentiometers, switches, meter jacks, pilot lamps, a fuse, and a function selector switch, all of which collectively perform the function of a junction box and signal source to facilitate the testing of the gyro. The tester includes a switching circuit which permits selection of one of two available

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-802110		
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.2.1	
	- Electronics Test Equipment -	M. Honeywell HT 163A	

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

TESTER, RATE GYRO CALIBRATING
Part No. HT 163A
(Minneapolis-Honeywell Regulator Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)

bridge load resistors of 1000 or 8000 ohms. Binding posts are provided on the front panel of the tester to permit connection of a vacuum tube voltmeter, a wattmeter, and a grounding cable.

Power Supply: 115 volts, AC, 400 cycles per second, single phase.

MANUFACTURERS' OR CONTRACTORS' DATA:

Minneapolis-Honeywell Regulator Company, 2753 Fourth Avenue, Minneapolis 8, Minnesota.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 33D3-6-2-1 (Instructions and Parts Breakdown).
TO 33D3-6-2-4 (Parts Catalog).

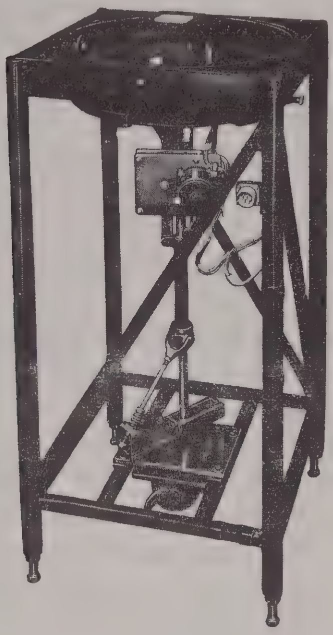
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Tester, Rate Gyro Calibrating (M. Honeywell HT 163A)	Metal	7CAC-802110	7-15/16	6	6-3/16	4.3

WOBBLE TABLE
Part No. HT 170
(Minneapolis-Honeywell Regulator Company)



FUNCTIONAL DESCRIPTION:

A portable test stand used with the Precession Tester HT174 to perform precession drift rate tests on the type K-3 Vertical Gyros. Automatic control of the wobble table operating and caging cycles is provided by the precession tester. In operation, the wobble table rocks the gyro between recording cycles, with the gyro torque motors off, to release static friction in the bearings and potentiometer wipers. Thus, the drift due to the unbalanced precession force may be determined. When in this measuring position, the table is held level or caged. In this caged position, the wobble table also provides a level mounting platform which can be rotated to any desired directional heading, permitting erection tests of the gyro in each direction.

RELATIONSHIP TO OTHER EQUIPMENT:

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-793650		
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.2.1	
	- Electronics Test Equipment -	M.-Honeywell HT 170	

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

WOBBLE TABLE

Part No. HT 170

(Minneapolis-Honeywell Regulator Company)

ELECTROMECHANICAL DESCRIPTION:

The wobble table consists of a welded, tubular steel framework supporting a universally gimbal-mounted table plate. There are four main subassemblies: the caging motor, driving motor, table plate, and center post.

Caging Motor: A split-phase, reversible induction motor, located under the table plate and mounted to the center post. The motor drives an arm which raises or lowers the table plate to the "caged" or "uncaged" positions.

Driving Motor: A motor that is identical to the caging motor in operating characteristics and power requirements, and is mounted to the lower frame members of the wobble table. The output shaft is coupled through a reduction gear assembly rotating continuously while the wobble table is operating.

Table Plate: A flat disc, mounted in the top of the table frame, coupled to the center post, and supported in a double gimbal assembly. The plate may be rotated to four detent positions corresponding to the four compass cardinal points. The table gimbal bearings lie in the same plane as the gyro gimbal bearings. This reduces acceleration forces produced by circular displacement of the gyro during the wobble cycle, which would effect gyro precession test results.

Center Post: The center post is rigidly attached to the table plate and extends downward through a sleeve and a turning knuckle. When the wobble table is caged, the center post is aligned with the center of the slotted drive arm and no motion is transmitted to the table plate. In the uncaged position, an eccentric motion is imparted to the center post, causing the table plate to oscillate in its gimbals.

Wobble Angle: Maximum allowable wobble angle for the table plate when caged is 0.1° (six minutes). When wobbling, the included angle of cone is 10° to 15°.

Power Supply: 115 volts, AC, 60 cycles per second, single phase power supplied from the HT174 Precession Tester.

MANUFACTURERS' OR CONTRACTORS' DATA:

Minneapolis-Honeywell Regulator Company, 2753 Fourth Avenue, Minneapolis 8, Minnesota.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 33D3-10-2-1 (Operation and Service Instructions).

TO 33D3-10-2-4 (Parts Breakdown).

WOBBLE TABLE
Part No. HT 170
(Minneapolis-Honeywell Regulator Company)

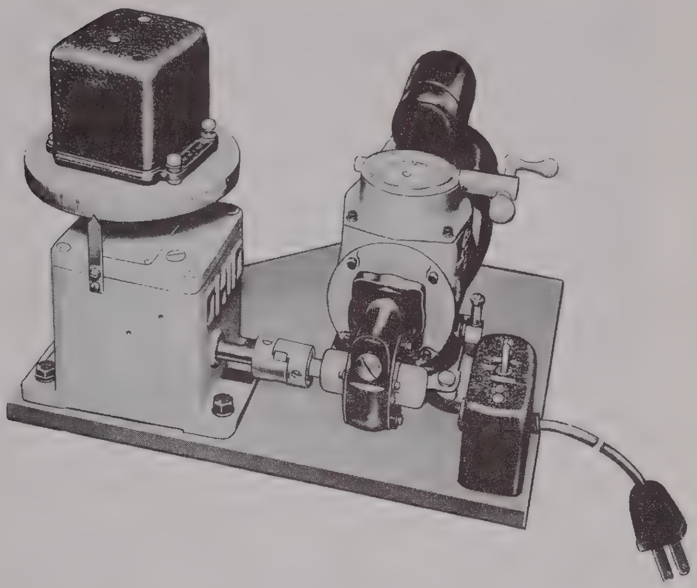
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Wobble Table Minneapolis-Honeywell Part No. HT 170		7CAC-793650				

TURNTABLE, RATE GYRO
Part No. HT 171
(Minneapolis-Honeywell Regulator Company)



FUNCTIONAL DESCRIPTION:

A portable precision tool which is used in conjunction with the HT 163 Tester for determining rate signal output of the types Y-1, Y-2, Y-3 and other of the type JG7005A series Rate Gyros. The turntable applies desired turning rates to the gyro for rate signal output measurements.

RELATIONSHIP TO OTHER EQUIPMENT:

MECHANICAL DESCRIPTION:

Physical Description: Turntable consists of a flat circular plate with a calibrated periphery. The plate is mounted on a speed reducer having a vertical output. A 1/3 horsepower induction motor drives the reducer by means of a reversible, variable speed transmission connected to the reducer by a flexible coupling. Motor, transmission, and reducer are mounted on a common base. The rate gyro to be tested is mounted on the turntable plate by means of screws. A three-position switch controls the drive motor.

Power Supply: 115 volts, AC, 60 cycles per second.

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CMH-HT171 7CAD-901520		
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.:	10.2.1
	- Electronics Test Equipment -		M. Honeywell HT 171

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

TURNTABLE, RATE GYRO
Part No. HT 171
(Minneapolis-Honeywell Regulator Company)

MECHANICAL DESCRIPTION: (Continued)

Ratio of Speed Reducer: 16 to 1 rpm.

Turntable Speed: 0 to 4 rpm, variable in speeds from 0.1 degree to 24 degrees per second.

Calibration of Turntable: To 360 degrees in increments of 1 degree to measure angular travel of turntable.

MANUFACTURERS' OR CONTRACTORS' DATA:

Minneapolis-Honeywell Regulator Company, 2753 Fourth Avenue, Minneapolis 8, Minnesota; Contract No. AF 33(600)19245.

REFERENCE DATA AND LITERATURE:

TO 33D3-10-3-1 (Operation and Service Instructions).
TO 33D3-10-3-4 (Parts Breakdown).

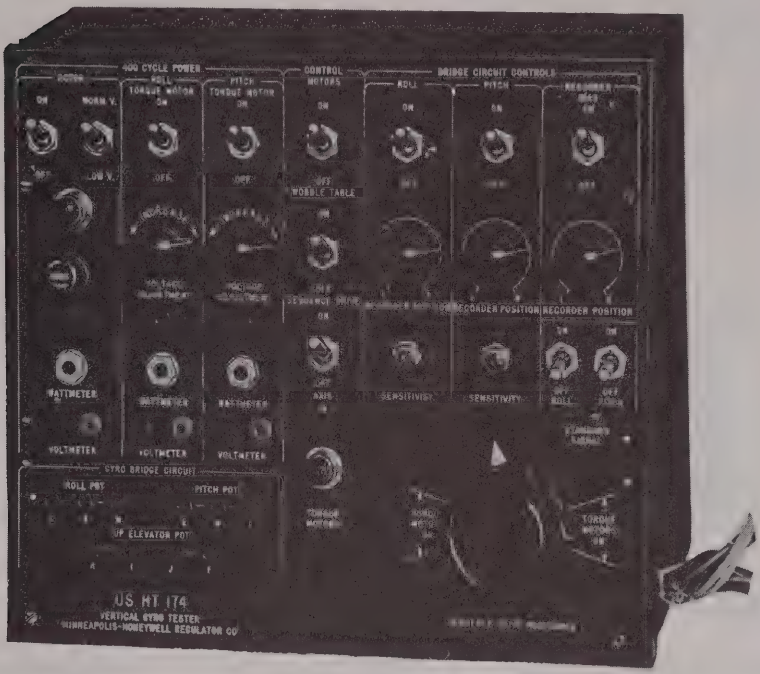
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Turntable, Rate Gyro Minneapolis-Honeywell Part No. HT 171	Metal	7CMH-HT171 and 7CAD-901520				

TESTER, VERTICAL GYRO PRECESSION
Part No. HT174
(Minneapolis-Honeywell Regulator Company)


400 CYCLE POWER
ROLL
TORQUE MOTOR
PITCH
TORQUE MOTOR
CONTROL
MOTORS
BRIDGE CIRCUIT CONTROLS
ROLL
PITCH
RECORDER
WOBBLE TABLE
RECORDER POSITION
RECORDER POSITION
WATTMETER
WATTMETER
WATTMETER
VOLTMETER
VOLTMETER
VOLTMETER
SENSITIVITY
SENSITIVITY
GYRO BRIDGE CIRCUIT
ROLL POT
PITCH POT
UP ELEVATOR POT
US HT 174
VERTICAL GYRO TESTER
MINNEAPOLIS-HONEYWELL REGULATOR CO

FUNCTIONAL DESCRIPTION:

A portable tester used in conjunction with the HT170 Wobble Table and Electronic Strip Chart Recorder for vertical gyro erection rate and precession drift rate tests on the JG7003A Vertical Gyro.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The gyro under test is placed on the wobble table and connected to the tester by means of cables and receptacles. Circuits in the tester control the vertical gyro, wobble table, and recorder through a test cycle for gyro precession drift rate tests. Auxiliary voltmeters, wattmeters, and a resistance bridge provide facilities for testing gyro power consumption and mercury switch and potentiometer operation. Results of the test sequence are given on the recorder.

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-812450		
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.2.1	
	- Electronics Test Equipment -		M.-Honeywell HT174

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

TESTER, VERTICAL GYRO PRECESSION
Part No. HT174
(Minneapolis-Honeywell Regulator Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)

Power Supply: 115 volts, AC, 400 cycles per second; 115 volts, AC, 60 cycles per second; three 1-1/2 volt dry cell batteries.

MANUFACTURERS' OR CONTRACTORS' DATA:

Minneapolis-Honeywell Regulator Company, 2753 Fourth Avenue, Minneapolis 8, Minnesota.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 33D3-6-3-1 (Operation and Service Instructions).
TO 33D3-6-3-4 (Parts Breakdown).

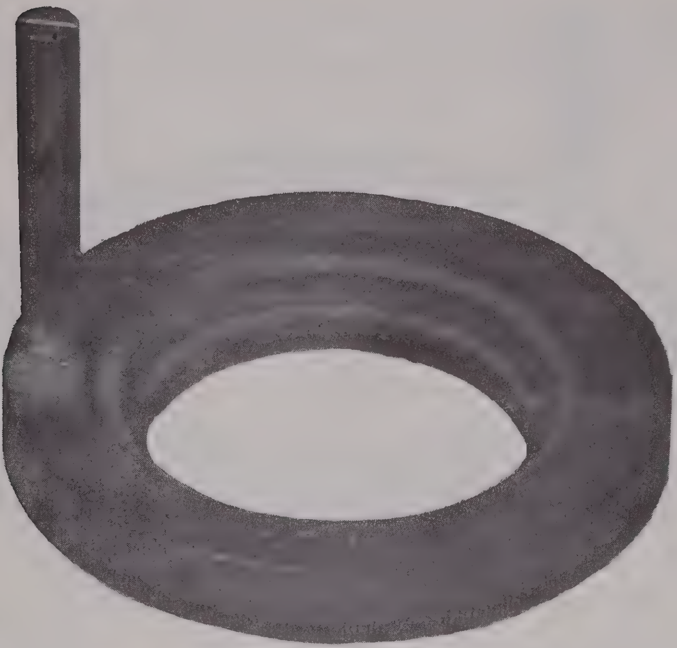
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Tester, Vertical Gyro Precession Minneapolis-Honeywell Part No. HT174	Metal	7CAC-812450				

DRILL JIG, VERTICAL GYRO ROTOR
Part No. HT253
(Minneapolis-Honeywell Regulator Company)



FUNCTIONAL DESCRIPTION:

A special purpose tool for locating the rotor of the JG7003A Vertical Gyro in a special drill press for the balancing operation by drilling.

RELATIONSHIP TO OTHER EQUIPMENT:

MECHANICAL DESCRIPTION:

Physical Description: This tool is used to locate and index the JG7003A Vertical Gyro Rotor in the special drill press supplied as part of Sperry Strodobyne balancer. It consists of a steel ring with a shoulder, which fits in a nest in the drill press table, and a counterbore which nests the gyro rotor. A short adjustable pin fits into a slot on the drill press table to position the drill jig and an indexing stud locates the gyro rotor. With the rotor properly held in place the drilling operation is performed according to information gained from the balancer.

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.			
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.2.1	
	- Electronics Test Equipment -		M. -Honeywell HT253

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U.S.A.

DRILL JIG, VERTICAL GYRO ROTOR
Part No. HT253
(Minneapolis-Honeywell Regulator Company)

MANUFACTURERS' OR CONTRACTORS' DATA:

Minneapolis-Honeywell Regulator Company, 2753 Fourth Avenue, Minneapolis 8, Minnesota.

REFERENCE DATA AND LITERATURE:

Manufacturer's Catalog, Form ADT-221.

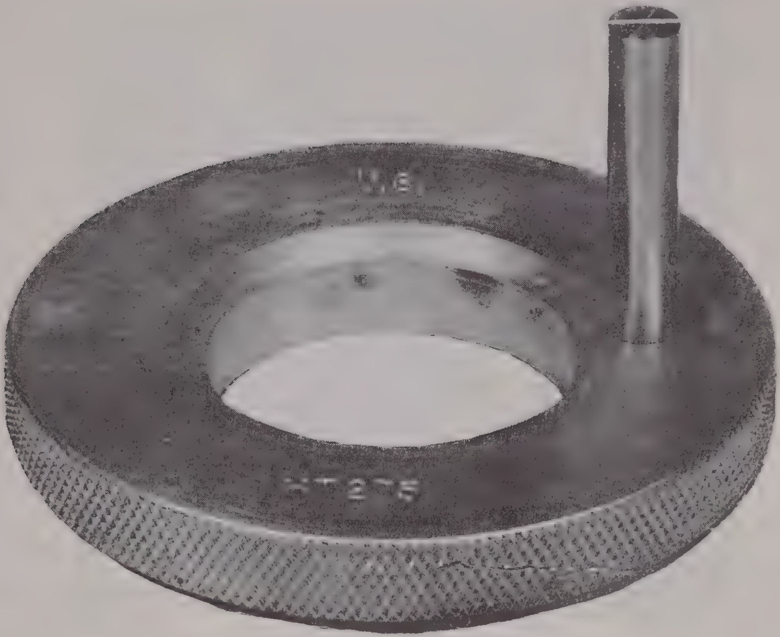
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	

DRILL JIG, RATE GYRO ROTOR
Part No. HT275
(Minneapolis-Honeywell Regulator Company)



FUNCTIONAL DESCRIPTION:

A special purpose tool for locating the rotor of the JG7005A Rate Gyro in a special drill press for the balancing operation by drilling.

RELATIONSHIP TO OTHER EQUIPMENT:

Used in balancing operation on JG7005A Rate Gyro Rotor.

MECHANICAL DESCRIPTION:

Physical Description: This tool nests the rotor in a special drill press supplied with the Sperry Strobodyne Balancer. It consists of a steel ring with a shoulder which fits into the drill press table and a short stud to index the drill jig in a slot. A second stud has a line engraved on its diameter common with the ring and serves as an index for the gyro rotor. With the rotor properly held in place the drilling operation is performed according to information gained from the balancer.

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.			
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.:	10.2.1
	- Electronics Test Equipment -		M.-Honeywell HT275

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

132

DRILL JIG, RATE GYRO ROTOR
Part No. HT275
(Minneapolis-Honeywell Regulator Company)

MANUFACTURERS' OR CONTRACTORS' DATA:
Minneapolis-Honeywell Regulator Company, 2753 Fourth Avenue, Minneapolis 8, Minnesota; Contract No. AF 33(600)19245.

REFERENCE DATA AND LITERATURE:
Manufacturer's Catalog, Form No. ADT-275.

SHIPPING DATA:

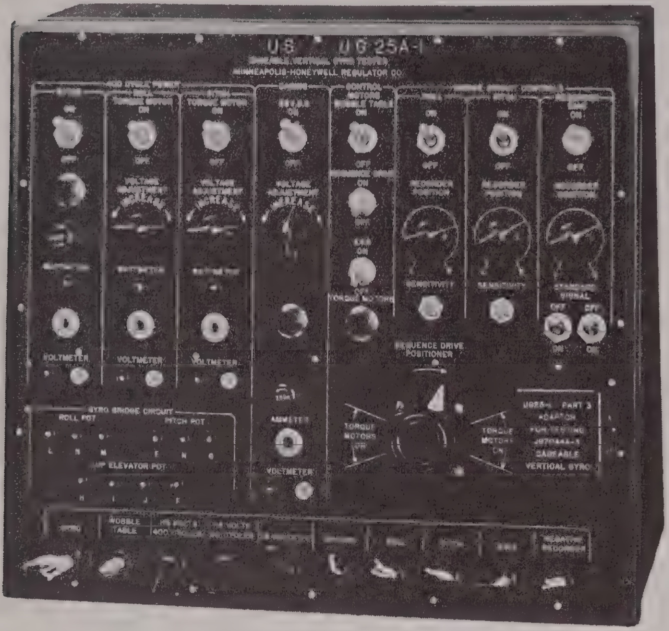
No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	

133

TESTER, GYRO ELECTRICAL
Part No. UG25A-1
(Minneapolis-Honeywell Regulator Company)


US UG25A-1
MINNEAPOLIS-HONEYWELL REGULATOR CO.
CONTROL MOTORS WOBBLE TABLE
ON
OFF
VOLTAGE ADJUSTMENT
INCREASE
SENSITIVITY
STANDARD SIGNAL
TORQUE MOTORS
VOLTMETER
AMMETER
SEQUENCE DRIVE POSITIONER
GYRO BRIDGE CIRCUIT
ROLL POT
PITCH POT
ELEVATOR POT
TORQUE MOTORS OFF
TORQUE MOTORS ON
UG25A-1 PART 3 ADAPTOR FOR TESTING JG7044A-1 CAGEABLE VERTICAL GYRO
WOBBLE TABLE
RECORDER

FUNCTIONAL DESCRIPTION:

A portable maintenance and overhaul device used to make tests and to measure the amount of precession in both the roll and pitch axes of the JG7044A Cageable Vertical Gyro. The adapter contains precession resistors and their values are calculated for each potentiometer (roll and pitch) of the particular gyro to be tested.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: This tester is used in conjunction with a wobble table and a recorder to measure the amount of precession in the gyro under test. Toggle switches and rheostats control the power delivered to the gyro rotor and torque motors, potentiometers, wobble table, recorder, and caging mechanism. Timing motors drive cams which operate switches to select proper sequence of level and wobble, energize recorder, and torque motors, and select the axis for recording.

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-802435		
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.2.1	
	- Electronics Test Equipment -	M.-Honeywell UG25A-1	

s project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

TESTER, GYRO ELECTRICAL
Part No. UG25A-1
(Minneapolis-Honeywell Regulator Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)

A resistance bridge supplies the standard signal to be recorded and used as a measure of precession.

Power Supply: 115 volts, AC, 60 cycles per second; 115 volts, AC, 400 cycles per second; 28 volts, DC; 1.5 volts, DC.

MANUFACTURERS' OR CONTRACTORS' DATA:

Minneapolis-Honeywell Regulator Company, Aeronautical Division, 2600 Ridway Road, Minneapolis 13, Minnesota; Contract No. AF 33(600)23140.

TUBE COMPLEMENT:

None

REFERENCE DATA AND LITERATURE:

Manufacturer's Catalog, Form ADT-282.

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

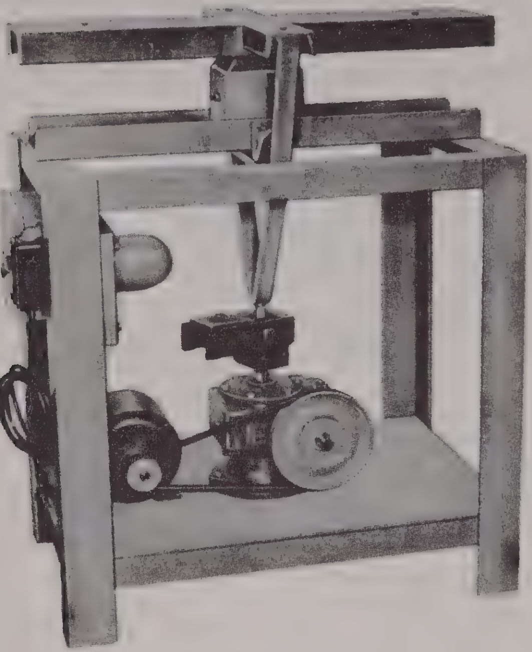
EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Tester, Gyro Electrical Minneapolis-Honeywell Part No. UG25A-1	Metal	7CAC-802435	15	6-1/2	14-1/2	15

SCORSBY BASE

Part No. T-100060

(Sperry Gyroscope Company)



FUNCTIONAL DESCRIPTION:

A general purpose test device which serves to apply roll, pitch, and yaw to gyroscopic instruments. The base consists of a head, a reductor, a drive motor, an eccentric, a brace and frame, and a reversing unit.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

The head of the scorsby base is driven by a 1/4 horsepower motor through a vertical right angle reductor. The change in the direction of rotation of the drive motor is accomplished by the reversing unit which reverses the phase of the motor starting winding. The reversing unit consists of three microswitches and a telechron motor. The reductor and pulleys reduce the speed of the head from the drive motor speed of 1700 rpm to the required six cycles per minute. The telechron motor continuously drives a cam and a pair of adjustable fingers which are linked by a pair of gears. The cam and fingers operate the three micro-

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-058825		
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.2.1	
	- Electronics Test Equipment -	Sperry Part No. T-100060	

his project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

SCORSBY BASE
Part No. T-100060
(Sperry Gyroscope Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)

switches which reverse the drive motor every 1.33 minutes. When the drive motor is operating the head, the scorsby base produces a compound motion which is a combination of yaw, roll, and pitch.

Power Supply:

115 volts, AC, 60 cycles per second, single-phase.

(When transformer is included with equipment, power requirements are: 230 volts, AC, 50 cycles per second.)

MANUFACTURERS' OR CONTRACTORS' DATA:

Sperry Gyroscope Company, Great Neck, Long Island, New York.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 33D3-10-5-11 (Operation and Service Instructions).

TO 33D3-10-5-14 (Parts Catalog).

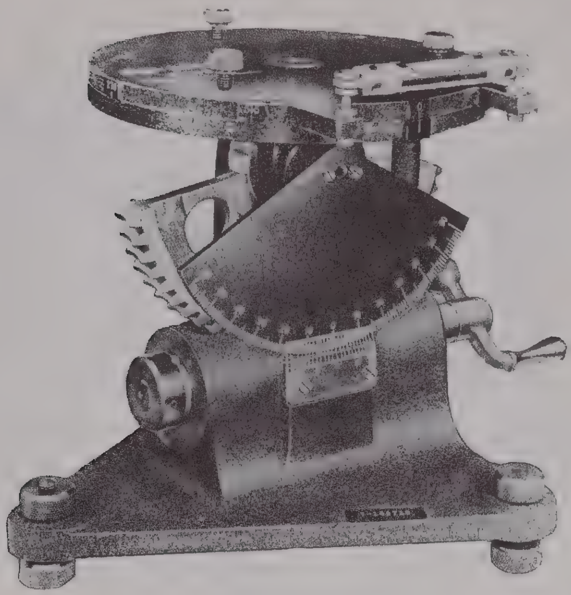
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Scorsby Base Sperry Part No. T-100060		7CAC-058825	36	30	20	

TABLE, TILT-TURN
Part No. T-100719
(Sperry Gyroscope Company)



FUNCTIONAL DESCRIPTION:

This tilt-turn table is used to calibrate and test the type K-2 Vertical Gyro Control and the type S3A Directional Gyro Control. These units are components of the A-14 and the MA-2 Autopilots. Calibration marks around the periphery of the turntable and on the tilt indicator sector measure the amount of movement to which the unit under test is subjected.

RELATIONSHIP TO OTHER EQUIPMENT:

MECHANICAL DESCRIPTION:

Physical Characteristics: The tilt-turn table consists of cast base with three leveling screws, a tilt table, tilt mechanism, a level, and a turntable. The turntable rotates on the tilt table and locks into any one of twelve equally spaced detent positions. The tilt mechanism has a worm and worm-wheel sector drive actuated by a crank handle and may be tilted in either direction through an angle of 60 degrees from the horizontal. A tilt indicator is mounted on the tilt mechanism. Provisions are made by means of three thumb screws to mount the gyro controls on the turntable. The tilt-turn table must be absolutely level before use. In operation the unit under test is mounted on the turntable. (The type K-2 Vertical Gyro

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-793625		
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.2.1	
	- Electronics Test Equipment -		Sperry T-100719

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

TABLE, TILT-TURN
Part No. T-100719
(Sperry Gyroscope Company)

MECHANICAL DESCRIPTION: (Continued)

Control is placed on the turntable with the "Forward" mark of the instrument in line with the turntable arrow marked "Dehydrator Plug." No set position is required for the type SDA Directional Gyro Control). The turntable and tilt mechanism are then regulated by means of the crank handle and functioning of the gyro control observed with reference to the tilt turntable indicators.

Power Supply: None.

Tilt Indicator Range: 0 to 60 degrees in both directions, graduated in 5° intervals.

MANUFACTURERS' OR CONTRACTORS' DATA:

Sperry Gyroscope Company, Division of the Sperry-Rand Corporation, Great Neck, Long Island, New York; Approximate Cost per Unit, $1183.00.

REFERENCE DATA AND LITERATURE:

TO 33D3-10-10-1 (Instructions and Parts Breakdown).

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

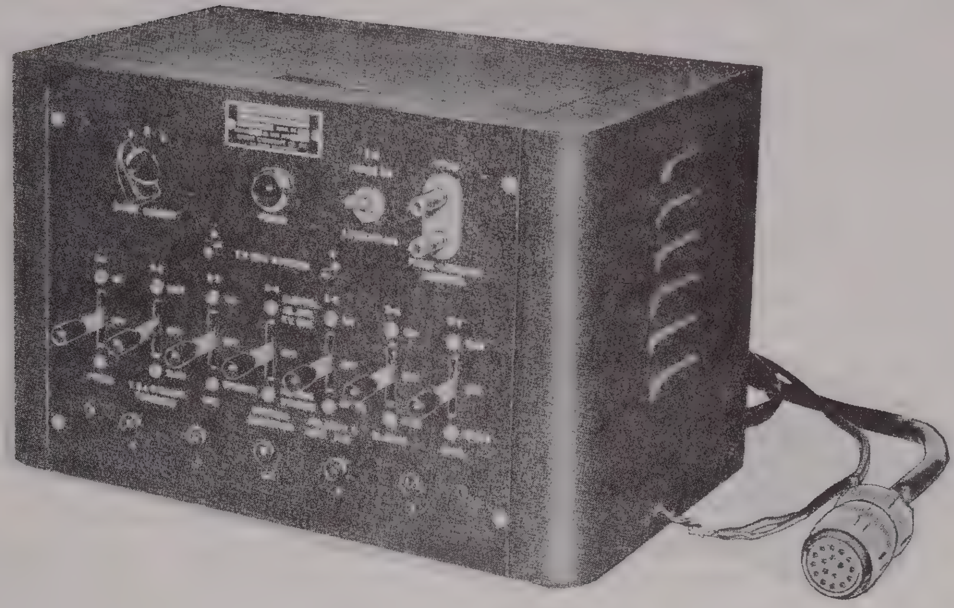
EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Table, Tilt-Turn (Sperry T-100719)	Metal	7CAC-793625				

ANALYZER-VERTICAL GYRO AND COMPASS CONTROL

Part No. T-100803

(Sperry Gyroscope Company)



FUNCTIONAL DESCRIPTION:

A portable analyzer which is used to test the type K-2 Vertical Gyro Flight Control, the type K-6 Roll and Pitch Control, and the type S-1, S-3, and S-3A Directional Gyro Controls. The vertical gyro flight control and the roll and pitch control are components of the type E-4 Automatic Pilot, and the directional gyro control is a component of the type E-4 Automatic Pilot, the type J-2 Slaved Gyro Magnetic Compass, and the Sperry Model A-12D Automatic Pilot. The analyzer provides facilities for checking synchro signal polarity and sensitivity, for checking gyro torquers, and for measuring power consumption.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The circuit consists of switches, transformers, resistors, pin jacks and an indicator lamp. Binding posts are provided for attaching a vacuum tube voltmeter for the purpose of reading the phase of leveling currents

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-294522		
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.2.1	
	- Electronics Test Equipment -	Sperry Part No. T-100803	

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

ANALYZER-VERTICAL GYRO AND COMPASS CONTROL
Part No. T-100803
(Sperry Gyroscope Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)

of the gyro under test. The functions of the various switches are as follows:

Phase Current Switch: A rotary switch used to measure "A", "B", and "C" phase currents on a vacuum tube voltmeter.

Vertical Gyro and Gyrosyn Torquers Switch: Used to control the speed of gyro erection from its maximum displacement position.

Synchro Excitation Switch: Used to control the application of voltage from one of the transformers in the analyzer to the synchro rotors in the gyro. When in the "Heading" position it applies voltage to the headings synchro rotor of the directional gyro control; when in the "Elevator Synchro-Aileron Synchro-Flux Valve Synchro" position it applies voltage to the flux valve synchro rotor in the directional gyro control or the elevator (pitch) synchro rotor and aileron (roll) synchro rotor in the vertical gyro flight control.

Polarity and Control Field Switch: Used to apply a voltage from a transformer in the analyzer in series with the synchro excitation voltage of the directional gyro control. This allows the polarity of the signal to be checked.

Slaving Switch: Connected across the secondary transformer of the analyzer to precess the directional gyro control either clockwise or counterclockwise.

Gyro Switch: Connected into the three-phase AC power circuit of the gyro. When in the "Run" position the rotor operates; when in the "Brake" position it serves as a brake to stop the rotor.

Phase MA, Leveling MA Switch: Connected in the phase and leveling circuits. When in the "Phase MA" position it permits the phase current to be read on an external vacuum tube voltmeter; when in the "Leveling MA" position it permits the leveling current to be read.

Power Supply: 115 volts (±2 volts), AC, 400 cycles per second (±5 cycles), three-phase, 25 watts.

MANUFACTURERS' OR CONTRACTORS' DATA:

Sperry Gyroscope Company, Great Neck, Long Island, New York; Contract No. AF 33(604)5747; Approximate Cost per Unit, $488.00.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 33D2-8-8-1 (Operation and Service Instructions).
TO 33D2-8-8-4 (Parts Breakdown).

ANALYZER-VERTICAL GYRO AND COMPASS CONTROL
Part No. T-100803
(Sperry Gyroscope Company)

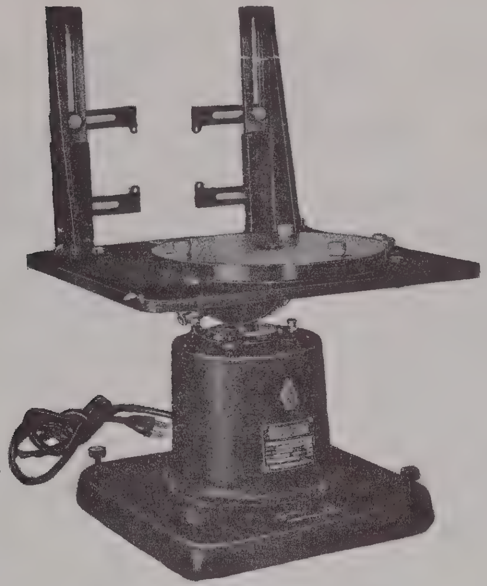
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Analyzer, Vertical Gyro and Compass Control Sperry Part No. T-100803	Metal	7CAC-294522	8	12-1/2	9-1/4	12

TABLE, SCORSBY
Part No. T-100925
(Sperry Gyroscope Company)



FUNCTIONAL DESCRIPTION:

This equipment is designed to test gyroscope assemblies by imparting Scorsby motion to the equipment mounted on it. This motion consists of oscillations in known amounts of roll, pitch, and yaw. This permits determining the extent of static friction inherent in gyroscope assemblies. By the use of a single change-over adjustment, the equipment can also be used as a turntable.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Mechanical Description: The test equipment consists essentially of a motor which drives a table through reduction gears and linkage. By attaching a tie rod to prevent the table from rotating, a Scorsby motion is obtained which is imparted to any equipment attached to the universal mount on the table. By detaching the tie rod, a rotary motion of approximately six rpm is available for test purposes.

Electrical Description: The motor rotation is reversible by means of an internal reversing switch which reverses the phase relationship between the voltages to the two motor windings. A control knob is provided so that direction of rotation can be reversed at any time, or automatically reversed every six cycles.

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-793550		
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.2.1	
	- Electronics Test Equipment -		Sperry T-100925

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A

TABLE, SCORSBY
Part No. T-100925
(Sperry Gyroscope Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)
Power Supply: 110 volts, AC, 60 cycles per second, single-phase.
Maximum Table Inclination: 15 degrees.

MANUFACTURERS' OR CONTRACTORS' DATA:
Sperry Gyroscope Company, Division of the Sperry-Rand Corporation, Great Neck, Long Island, New York.

TUBE COMPLEMENT:
None.

REFERENCE DATA AND LITERATURE:
TO 33D3-10-6-1 (Operation and Service Instructions).
TO 33D3-10-6-4 (Parts Catalog).

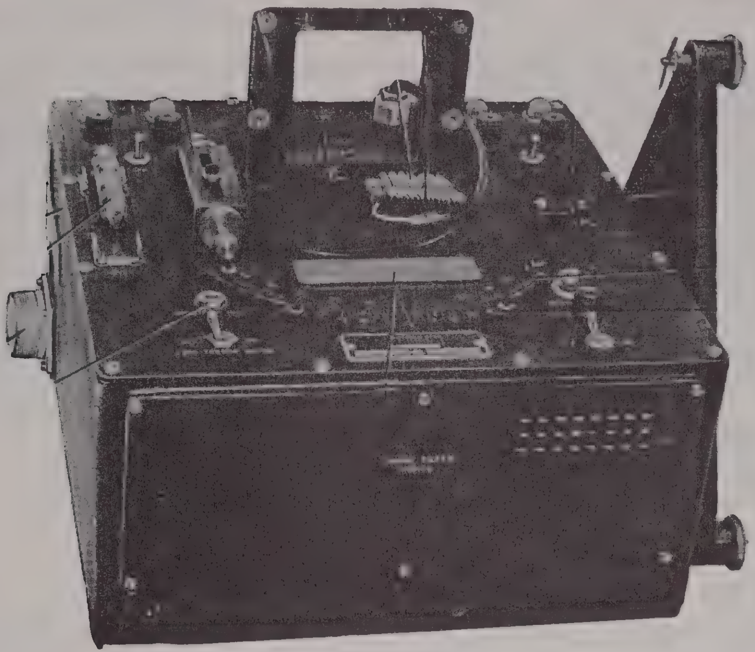
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Table, Scorsby (Sperry T-100925)		7CAC-793550				

GYRO TURNTABLE
Part No. T-101013
(Sperry Gyroscope Company)



FUNCTIONAL DESCRIPTION:

A general purpose portable test equipment used to obtain gyro drift rates by allowing the gyro to become stabilized in space, then measuring the apparent drift of the gyro over a definite period of time from a designated reference point. The specific values of drift rate, to be compared with the actual gyro drift rate, are derived from the angular velocity of the earth's rotation. The tester is also used in making checks on the operation of the various components of the gyro and bracket assembly.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

The equipment consists of a turntable driven through a 1:54 reduction gearing mechanism by a servo motor which receives signals from a type IH amplifier. The turntable movement may be measured by means of the turntable scale which is mounted on the turntable, and the vernier scale mounted on the panel of the tester.

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-901575		
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.2.1	
	- Electronics Test Equipment -	Sperry Part No. T-101013	

is project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

GYRO TURNTABLE
Part No. T-101013
(Sperry Gyroscope Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)

Circuit Information: The turntable provides a means of applying B and C-phase power for excitation of the gyro rotor, and applying single phase power for excitation of the gyro torque motor and error pickoff synchro. The error pickoff signal from the gyro and bracket assembly may be measured with a voltmeter at a meter jack before being sent to the IH amplifier.

Power Supply: Power is obtained from the power supply junction box. Servo motor requires 115 volts, AC, single-phase, 400 cycles per second, approximately 25 watts. IH amplifier requires 175 volts, DC, 25 watts; 300 volts, DC, 25 watts; and 6.3 volts, AC, 400 cycles per second, 10 watts. In addition, 115 volts, AC, B and C-phase, 400 cycles per second power is required by the turntable to energize the gyro during the tests.

Turntable Scale: Rotates with the turntable, and is graduated in degrees on either side of an index up to a maximum of 50 degrees.

Vernier Scale: Stationary, and is graduated in minutes on either side of the index up to 60 minutes.

MANUFACTURERS' OR CONTRACTORS' DATA:

Sperry Gyroscope Company, Great Neck, Long Island, New York.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 33D5-13-6-1 (Operation and Service Instructions).

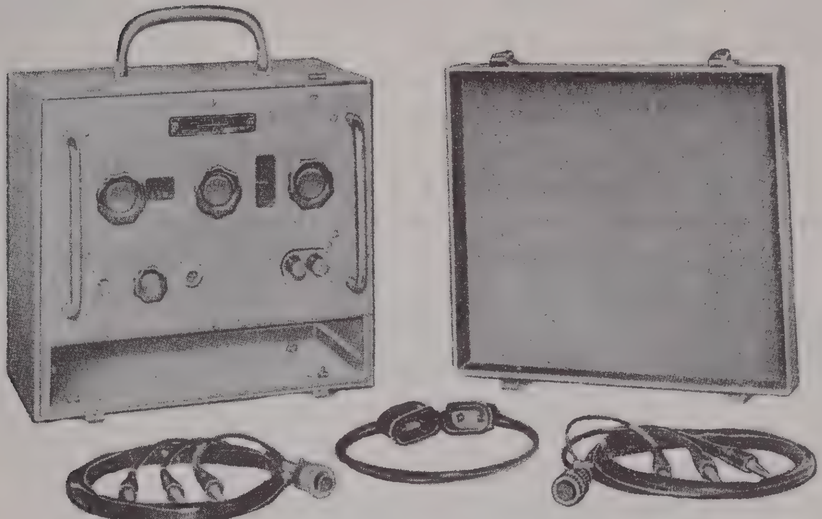
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Gyro Turntable Sperry Part No. T-101013		7CAC-901575	11-3/8	13-1/4	13	25

SYNCHRO TEST SET AN/USM-17



FUNCTIONAL DESCRIPTION:

A portable general purpose set which is used to measure the angle represented by voltages present at the terminals of a synchro. The test set may be connected across the output of a synchro or in parallel with the terminals of one of the synchros in a chain to measure the transmitted angle.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: A synchro is a variable transformer with three fixed (stator) windings and one movable (rotor) winding. The voltage induced in each stator depends on the angular position of the rotor. This position is a function of the ratio of the voltages between each pair of leads. The synchro test set measures this ratio directly, and gives the result in degrees of rotor rotation from electrical zero. This is accomplished by means of a precision voltage divider circuit and a voltmeter which indicates a null.

Power Supply: None required.

Voltage Divider Calibrated Range:

Range Selector: 0 to 360° (mechanical) in 60° steps.

Course Angle: 0 to 360° (mechanical) in 5° steps.

Fine Angle: 0 to 5° (mechanical) in 0.1° steps.

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.	Alternate Standard		
STOCK NOS.	7CAC-801319-6525		

PROCUREM'T INFO.: USAF Spec. No. 71-5056-A

PROCUREM'T COG.: USAF DESIGN COG.: USAF, Arm.

F.I.I.N.: FUNCTIONAL CLASS. NO.: 10.2.2

is project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U.S.A.

SYNCHRO TEST SET AN/USM-17

ELECTROMECHANICAL DESCRIPTION: (Continued)
Accuracy: ±0.1°.
Temperature Range: 0°C. (+32°F.) to +45°C. (+113°F.), operational; -65°C. (-85°F.) to +85°C. (+185°F.), storage.
Humidity Range: Up to 95% (relative) at either of the temperature ranges.
Altitude Range: Up to 10,000 feet, operational; up to 50,000 feet, storage.

MANUFACTURERS' OR CONTRACTORS' DATA:

Western Electric Company, 120 Broadway, New York, New York; USAF Contract No. AF 33(038)7414; Western Electric Spec. No. GS-15330; Approximate Cost per Unit, $250.00., 1954.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 33D5-8-3-1 (Operation and Maintenance Instructions).

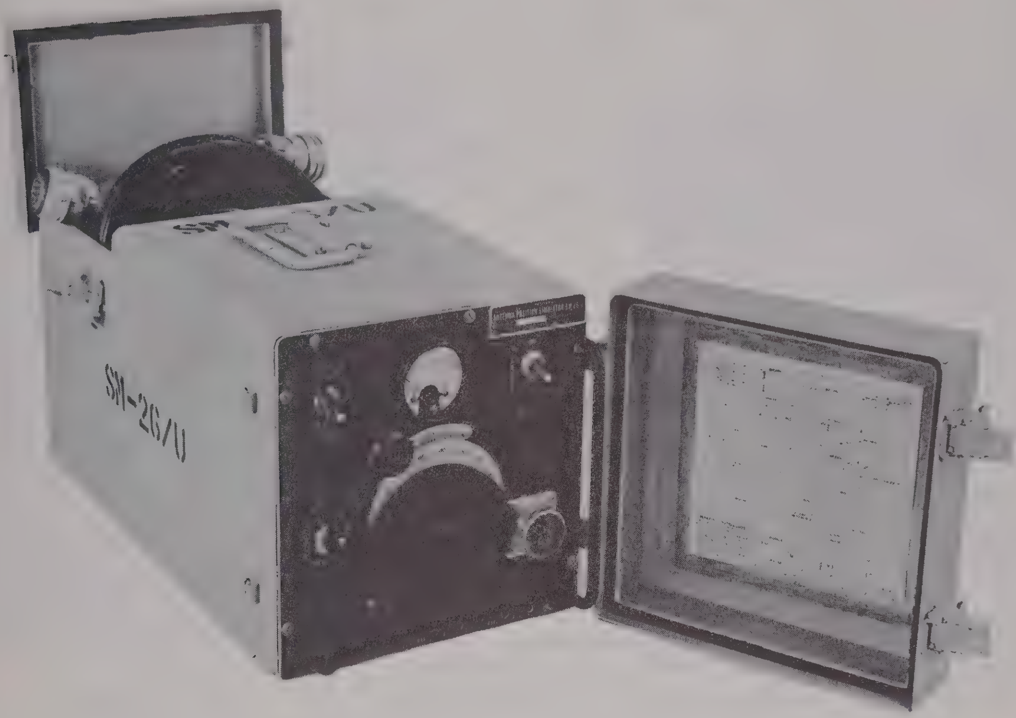
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock (USAF) Numbers (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Synchro Test Set AN/USM-17	Aluminum	7CAC-801319-6525	11-3/4	11-7/8	9-3/4	15
2	Cable BO-717320			39-1/2 long			
1	Null Detector Patch Cord BO-711587			48 long			

ANTENNA POSITION SIMULATOR SM-26/U



FUNCTIONAL DESCRIPTION:

A portable, general purpose, antenna position simulator designed to test the accuracy of direction finder indicating equipment azimuth indicators. It may be substituted for the antenna system output and/or for the radio direction finder and receiver output in the direction finder station for the purpose of calibration and performance tests. Indication is on a voltmeter dial and an azimuth indicator dial (degrees).

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: This equipment consists of a single unit containing a synchronous motor, two 30 cycle alternators, an AC voltmeter, an azimuth indicator, a phase reversing switch, a pilot light, fuses, and cables. These components are so arranged as to simulate the operation of a direction finder antenna system, either for comparison with one being tested or as a substitute for one in direction finding equipment being tested. In the former case, the azimuth indicator

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-725210		
PROCUREM'T INFO.: USAF Exhibit ENG-217A, Spec, MIL-A-4887			
PROCUREM'T COG.: USAF	DESIGN COG.: USAF, Rome		
F.I.I.N.:	FUNCTIONAL CLASS. NO.: 10.2.2		

is project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U.S.A.

ANTENNA POSITION SIMULATOR SM-26/U

ELECTROMECHANICAL DESCRIPTION: (Continued)

reading is compared with that in the equipment under test after locating a targe or beacon. In the latter case, this set is plugged into the output of the equipmen and operates as part of it. The variable 30 cycle output is obtained by rotatin the stator housing which is directly coupled to the azimuth indicator.

Power Supply: 110 volts, AC, 60 cycles per second, single phase.
Frequency Range: 30 cycles per second (fixed).
Output: 0 to 10 volts, AC, single phase and two phase.
Accuracy of Phase Angles: ±0.25° over 360°.

MANUFACTURERS' OR CONTRACTORS' DATA:

Electric Indicator Company, Stamford, Connecticut; USAF Contract AF 33(038 26107 dated 24 May 1951; Approximate Cost per Unit, $750.00.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 16-35SM26-2 (Service Instructions).
TO 16-35SM26-4 (Parts Breakdown).

SHIPPING DATA:

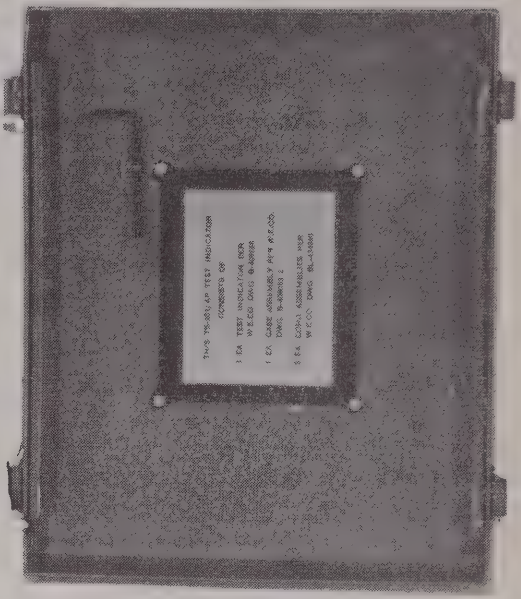
No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Antenna Position Simulator SM-26/U	Aluminum	7CAC-725210	9	9	19	26

TEST INDICATOR TS-203/AP
(TEST SET, SYNCHRO, TS-203/AP)

This research was supported by the USAF under Contract AF 33(038)12897 and monitored by the Wright Air Development Center, ARDC - Carl L. Frederick and Associates, Bethesda, Maryland - Multilithed in U.S.A.



FUNCTIONAL DESCRIPTION:

A portable precision synchro used for testing and calibrating the antenna synchro unit and the indicator of Radar System AN/APQ-7. It is accurately calibrated in degrees (-2 to +32) from its zero position and varies the applied voltage in proportion to the sine of that angle. The test set is a means of adjusting the amplitude ratio of output to input when appropriate voltages are applied to its rotor.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The synchro unit acts as a transformer with a rotor used as a primary and three stator windings, spaced 120 degrees apart, functioning as secondaries. For a certain position of the rotor, the voltage induced in one secondary winding will be maximum and the voltage in each of the other two secondaries will be half of maximum amplitude. If the rotor is turned 120 degrees (or any multiple thereof) the above condition will exist with the induced

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			Not Classified
STOCK NOS.	7CAC-801319-653		3F4325-203
PROCUREM'T INFO.:			
PROCUREM'T COG.: USAF		DESIGN COG.: USAF, Arm.	
F.I.I.N.:		FUNCTIONAL CLASS: 10.2.2	

TEST INDICATOR TS-203/AP
(TEST SET, SYNCHRO, TS-203/AP)

ELECTROMECHANICAL DESCRIPTION: (Continued)
voltage in each secondary coil, in turn, becoming maximum. If the rotor is turned 90 degrees from any position which produces a maximum voltage, then the voltage in that coil will be reduced to zero and the other two coils will have 86.6 percent of maximum amplitude induced in them.

Power Supply: None required.
Input Voltage: 0 to 26 volts, AC, single-phase, 400 to 100,000 cycles per second.
Output Voltage: Voltage output depends upon input voltage and position of rotor.
Transformation Ratio: 2.
Accuracy: ±0.25 degrees from 0-24 degrees dial position.
±0.55 degrees from 25-30 degrees dial position.
Temperature Range: -40° C. to 71° C.

MANUFACTURERS' OR CONTRACTORS' DATA:

Western Electric Company, 120 Broadway, New York, New York, Contract No. 73-DAY-45RA, 9/28/44, Approximate Cost per Unit, $578.00; Contract No. AF 33 (038)28870.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 16-35TS203-2 (Maintenance Instructions).
TO 16-35TS203-21 (Modification).

SHIPPING DATA:

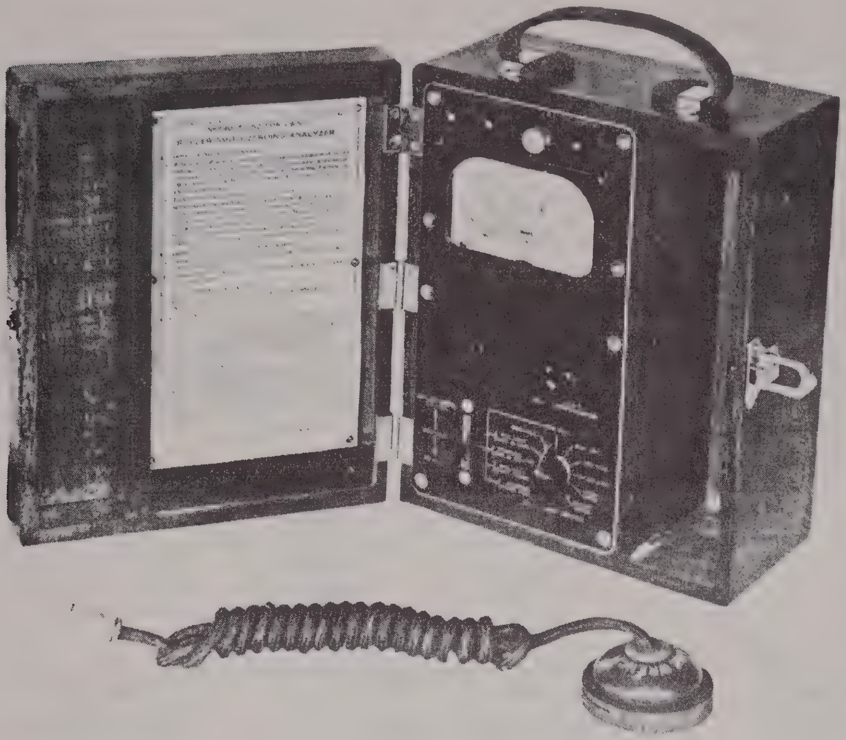
No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Over-all Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
1	Test Indicator TS-203/AP (Shelf Package - Water Resistant Carton).	0.99	12	11	13	10

TEST INDICATOR TS-203/AP
(TEST SET, SYNCHRO, TS-203/AP)

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Over-all Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Test Indicator TS-203/AP		7CAC-801319-653 3F4325-203	5-1/2	4-1/2	6-1/2	
1	Case CY-197/AP	Aluminum	3F2623-197	7-1/4	7	9	
3	Cord CG-140/AP		7CAC-170265-3 3E6015-140	72 long			
1	Instruction Book		6D9810-203			Total:	6

PHASING ANALYZER TS-215/AP
(TEST SET, ELECTRICAL POINT TS-215/AP)



FUNCTIONAL DESCRIPTION:

A portable and self-contained instrument used for accurately adjusting aircraft ype Selsyn generators, differential Selsyn, and Selsyn control transformers to mini-num, maximum, or zero voltage. It can also be used to measure various ranges f alternating and direct voltage and resistance.

RELATIONSHIP TO OTHER EQUIPMENT:

Replaced by TS-653/APG Synchro Phasing Tester.

ELECTROMECHANICAL DESCRIPTION:

Power Supply: Phasing Analyzer, 115 volts, 400 cycles per second (from equipment under test). Multimeter, 1.5 volts.

Ranges:
- Alternating Voltage: 0 to 3, 30, 300, and 600 volts.
- Direct Voltage: 0 to 50, 150, and 500 volts.
- Resistance: 0 to 1000, and 10,000 ohms.

Accuracy: ±3%.

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.	Limited Standard		Not Classified
STOCK NOS.	7CAC-801319-2248		3F4325-215
PROCUREM'T INFO.:			
PROCUREM'T COG.: USAF		DESIGN COG.: USAF, Arm	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.2.2	

PHASING ANALYZER TS-215/AP
(TEST SET, ELECTRICAL POINT TS-215/AP)

MANUFACTURERS' OR CONTRACTORS' DATA:

Roller-Smith Company, Bethlehem, Pennsylvania; Contract No. 535-43-17024AI; Order No. 1322-DAY-44. 2141-45, 3/31/45; Approximate Cost per Unit, $116.00.

Realty & Industrial Company, Philadelphia, Pennsylvania; Contract No. 1324-44, 11/28/44; Approximate Cost per Unit, $123.00.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 16-35TS215-2 (Maintenance Instructions).

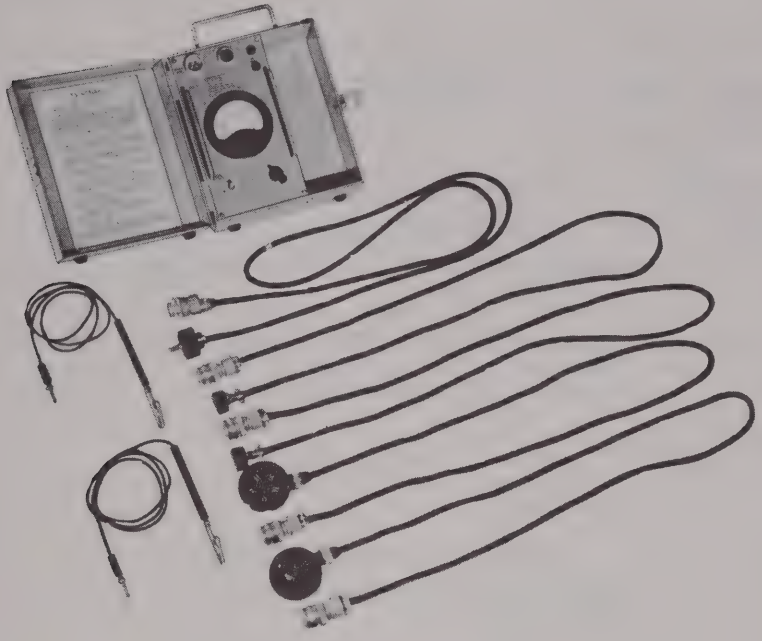
EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Over-all Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Phasing Analyzer TS-215/AP (Complete)	Plywood	7CAC-801319-2248 3F4325-215	5-1/2	7-1/4	9-3/4	6.37
2	Cord CX-529/U		7CRS-M21510 3F4325-215/L1	60 long			0.27
1	Cord CX-590/AP		7CAC-170264-965 3E6000-590	60 long			0.37
1	Cord			48 long			0.32

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Over-all Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
1	Phasing Analyzer, TS-215/AP (Water resistant carton)	0.67	8	12	12	11.9

SYNCHRO PHASING TESTER TS-653/APG
(TEST SET, SYNCHRO, TS-653/APG)



and monitored by the Wright Air Development Center, ARDC - Carl L.
Frederick and Associates, Bethesda, Maryland - Multilithed in U.S.A.

FUNCTIONAL DESCRIPTION:

A portable and self-contained instrument used for accurately adjusting aircraft type Selsyn generators, differential Selsyns, and Selsyn control transformers to minimum, maximum, or zero voltage. It is used to inject 115 alternating volts to Selsyns and then measure the voltage thereon to indicate maximum, zero, or minimum voltages, thus indicating position of rotor with respect to certain phase of stator. It can also be used as a general purpose voltmeter to measure various ranges of alternating voltages.

RELATIONSHIP TO OTHER EQUIPMENT:

Similar to Phasing Analyzer TS-215/AP except that the TS-653/APG is enclosed in a metal case, uses AN connectors on test cables, is built to USAF specifications, and uses only three AC scales on meter.

ELECTROMECHANICAL DESCRIPTION:

Power Supply: 115 volts, 50 to 800 cycles per second.

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.	Standard		Not Classified
STOCK NOS.	7CAC-801319-65		3F4325-653
PROCUREM'T INFO.:	USAF Spec. No. 7189, Dwg. No. 48D13172		
PROCUREM'T COG.:	USAF	DESIGN COG.:	USAF, Arm.
F.I.I.N.:		FUNCTIONAL CLASS:	10.2.2

SYNCHRO PHASING TESTER TS-653/APG

(TEST SET, SYNCHRO, TS-653/APG)

ELECTROMECHANICAL DESCRIPTION: (Continued)

Meter Range:

Alternating Voltage: 0 to 1.5, 30, and 300 volts.

Voltmeter Frequency Range: 50 to 800 cycles per second.

Sensitivity: 2000 ohms per volt.

MANUFACTURERS' OR CONTRACTORS' DATA:

Winslow Company, Inc., 9 Liberty Street, Newark 5, New Jersey; Order No. 49-1845, 12/10/48; Approximate Cost per Unit, $69.00, Contract No. AF 33(038) 49-1845.

Federal Television Corporation, New York, New York; Contract No. AF 33(038) 5232.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 16-35TS653-2 (Operating Instructions).

TO 16-35TS653-4 (Parts Catalog).

TO 16-35TS653-12 (Service Instructions).

TO 16-35TS653-14 (Parts Breakdown).

SHIPPING DATA:

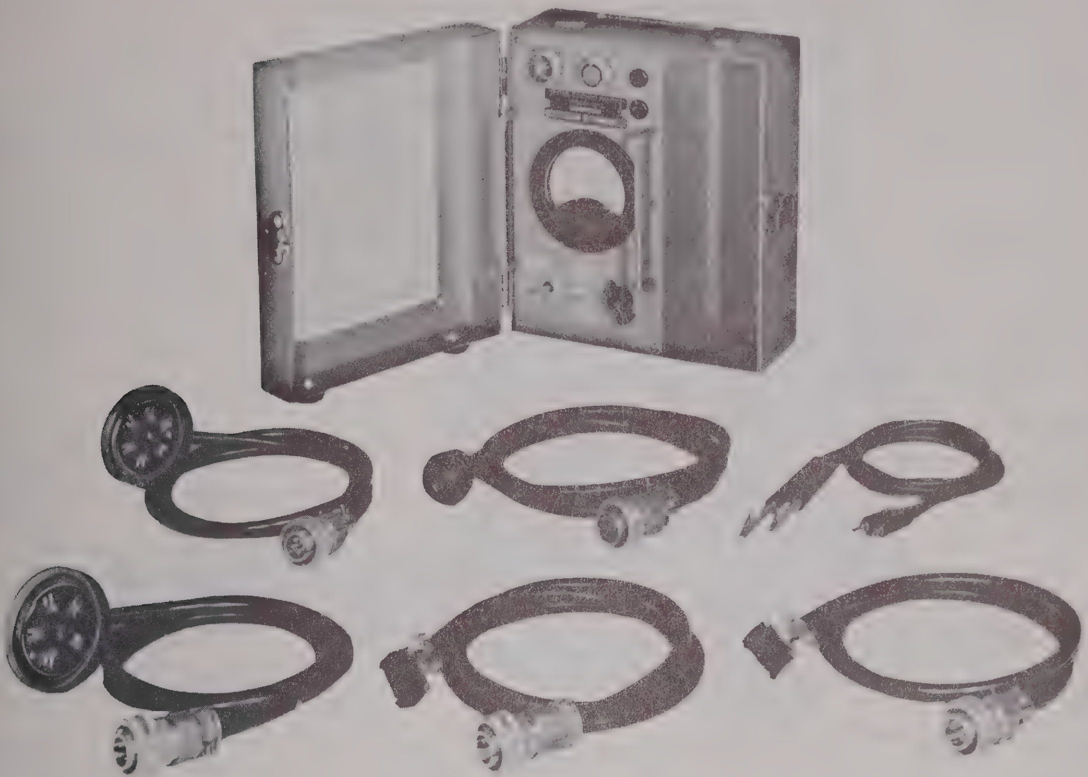
No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Over-all Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

SYNCHRO PHASING TESTER TS-653/APG
(TEST SET, SYNCHRO, TS-653/APG)

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Over-all Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Synchro Phasing Tester TS-653/APG (Complete)	Aluminum	7CAC-801319-65 3F4325-653	9	8	5	6.5
1	Power Supply Cable CX-770/U		1800-322978666 3E6000-770-72	72 long			
1	Cable CX-1090/U			48 long			
1	Cable CX-1092/U			48 long			
1	Cable CX-1091/U			48 long			
1	Cable CX-1089/U			48 long			
2	Test Lead CX-529/U		7CAC-468919-7 3E6000-529	51-1/2 long			

SYNCHRO PHASING TESTER TS-653A/APG
(TEST SET, SYNCHRO, TS-653A/APG)



FUNCTIONAL DESCRIPTION:

A portable, self-contained instrument used for accurately adjusting aircraft type Selsyn generators, differential Selsyns, and Selsyn control transformers to minimum, maximum, or zero voltage. It is used to inject 115 alternating volts to Selsyns and then measure the voltage thereon to indicate maximum zero, or minimum voltages, thus indicating position of rotor with respect to certain phase of stator. It can also be used as a general purpose voltmeter to measure various ranges of alternating voltages.

RELATIONSHIP TO OTHER EQUIPMENT:

Similar to TS-653A/APG except a Marion meter is incorporated in the "A" model for which temperature compensating circuits are wired-in.

ELECTROMECHANICAL DESCRIPTION:

Power Supply: 115 volts, AC, 50 to 800 cycles per second, single phase.
Meter Range:
Alternating Voltage: 0 to 1.5, 30, and 300 volts.

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-801319-6315		3F4325-653A
PROCUREM'T INFO.:	USAF Spec. No. 7189, Dwg. No. 48D13172		
PROCUREM'T COG.:	USAF	DESIGN COG.:	USAF, Arm.
F.I.I.N.:		FUNCTIONAL CLASS. NO.:	10.2.2
	- Electronics Test Equipment -		TS-653A/APG

his project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

SYNCHRO PHASING TESTER TS-653A/APG
(TEST SET, SYNCHRO, TS-653A/APG)

ELECTROMECHANICAL DESCRIPTION: (Continued)

Voltmeter Frequency Range: 50 to 800 cycles per second.
Sensitivity: 2000 ohms per volt.

MANUFACTURERS' OR CONTRACTORS' DATA:

Monument Engineering Company, Indianapolis, Indiana; Contract No. AF 33(03
9773.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 16-35TS653-6 (Operation and Service Instructions).
TO 16-35TS653-8 (Parts Catalog).

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Over-all Dimensions (inches)			Weigh (Lbs.
				H	W	D	
1	Synchro Phasing Tester TS-653A/APG (Complete)	Aluminum	7CAC-801319-6315 3F4325-653A	9	8	5	6.5
1	Power Supply Cable CX-770/U		1800-322978666 3E6000-770-72	72 long			
1	Cable, CX-1090/U			48 long			
1	Cable CX-1091/U			48 long			
1	Cable CX-1092/U			48 long			
1	Cable CX-1089/U			48 long			
2	Test Lead CX-529/U		7CAC-468919-7 3E6000-529	51-1/2			

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Over-all Dimensions (inches)			Weigh Packe (Lbs.
			H	W	D	

SYNCHRO TEST SET TS-713/U
(TEST SET, SYNCHRO, TS-713/U)

This research was supported by the USAF under Contract AF 33(038)1289
and monitored by the Wright Air Development Center, ARDC - Carl L.
Frederick and Associates, Bethesda, Maryland - Multilithed in U.S.A.

FUNCTIONAL DESCRIPTION:

A portable equipment which simulates the output of antenna Selsyns. This set furnishes two ratios of selsyn information at four speeds. It is used in depot testing the antenna systems of radar sets.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: Two synchro generators are driven by an 1800rpm synchronous motor through a variable-speed gear train controlled from the panel.

Power Supply: 115 volts, AC, 60 cycles per second, single-phase.

Current Requirements:
- Motor: 0.4 amperes.
- 1:1 Synchro: 1.3 amperes.
- 36:1 Synchro: 1.3 amperes.

Simulated Antenna Speeds: 3.3, 5, 6.6, 10 revolutions per minute.

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.	Substitute Standard		
STOCK NOS.	7CAC-801319-66		
PROCUREM'T INFO.: Watson Laboratories Exhibit ENG-2144.			
PROCUREM'T COG.: USAF		DESIGN COG.: USAF, Rome	
F.I.I.N.:		FUNCTIONAL CLASS: 10.2.2	
- Electronics Test Equipment -			TS-713/U

SYNCHRO TEST SET TS-713/U
(TEST SET, SYNCHRO TS-713/U)

ELECTROMECHANICAL DESCRIPTION: (Continued)
Selsyn Information Ratios: 1:1 and 36:1.
Ambient Temperature: -18°C. to +60°C.
Humidity Limits: 0 to 95%.

MANUFACTURERS' OR CONTRACTORS' DATA:

Airborne Instruments Laboratories, Inc., Mineola, New York; USAF Contract No. AF 33(038)28829 dated 22 June 1951.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 16-35TS713-1 (Operation Instructions).
TO 16-35TS713-2 (Service Instructions).
TO 16-35TS713-3 (Overhaul Instructions).
TO 16-35TS713-4 (Parts Breakdown).

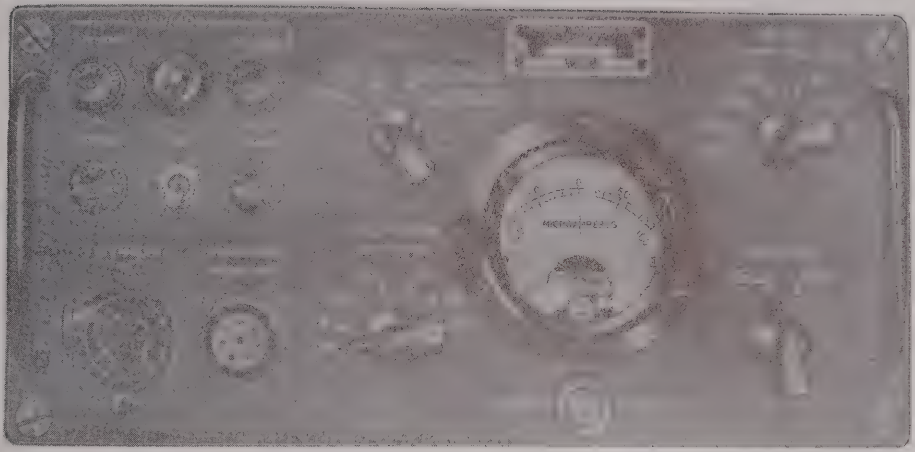
EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Over-all Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Synchro Test Set TS-713/U	Steel	7CAC-801319-66	14-3/8	13-1/2	14-1/2	60
1	Cable Assembly Special Purpose Electrical CX-2050/U			96 long			

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Over-all Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

SYNCHRO ALIGNMENT SET TS-714/U



FUNCTIONAL DESCRIPTION:

A portable, general purpose test set used to check the electrical zero alignment of 400 cycles per second synchros and resolvers. It can also be used as a phase-sensitive voltmeter for measuring in- or out-of-phase voltages and fundamental components of synchro and resolver output voltages.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The circuit includes a band-pass amplifier, a power supply, a synchro-resolver excitation supply, and switching circuits. The output voltages from the synchros and resolvers are applied to the band-pass amplifier. The resultant amplifier output is fed to a phase-sensitive detector circuit. This circuit acts such that the 90-degree component from the synchro or resolver produces no output from the detector. The detector output is in the form of a

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.			

PROCUREM'T INFO.:
PROCUREM'T COG.: Navy
DESIGN COG.: Navy, BuOrd
FUNCTIONAL CLASS. NO.: 10.2.2
F.I.I.N.:
TS-714/U

- Electronics Test Equipment -

SYNCHRO ALIGNMENT SET TS-714/U

ELECTROMECHANICAL DESCRIPTION: (Continued)

direct current metered by the zero center microammeter on the front panel of the test set. The power supply is of conventional design employing a full-wave electron tube rectifier and is contained in a separate chassis at the rear of the test set.

Power Supply: 115 volts ±10%, AC, 400 cycles per second, ±5%.

Meter Range: 100-0-100 microamps, AC.

Electrical Alignment Excitation Output: 3, 10, 26, 57, 78, and 115 volts, AC, at 0.150 amp. The standby current is 0.197 amp and the maximum operating current is 0.270 amp.

Voltmeter Ranges (when used as a phase-sensitive voltmeter): 0 to 0.1, 0 to 1.0, 0 to 10, 0 to 100, 0 to 300 volts rms full scale.

Input Impedance (when measuring voltages): 100,000 ohms.

Calibration: Internal controls are provided to balance the metering amplifier so that the meter reading will be accurate.

MANUFACTURERS' OR CONTRACTORS' DATA:

NORD 9866

TUBE COMPLEMENT:

1 6X4, 1 5670.

REFERENCE DATA AND LITERATURE:

NavOrd OD 8198.

SHIPPING DATA:

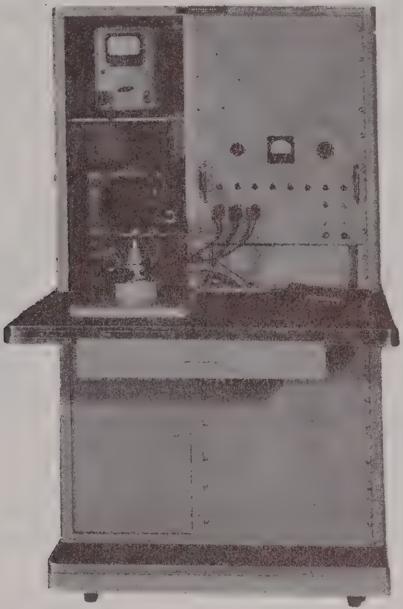
No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
	Synchro Alignment Set TS-714/U					

SYNCHRO ALIGNMENT SET TS-714/U

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Synchro Alignment Set TS-714/U Including:	metal		7-3/8	13-1/32	14-11/16	23
1	Cable			6'1" long			15 oz.
1	Cable, Power			6'1" long			17 oz.
1	Wrench, Pinion			7" long			2 oz.
1	Wrench, Pinion			5" long			2 oz.
1	Wrench, Pinion			2" long			2 oz.
2	Adapter			8-1/4" long			5 oz.

TEST SET, ANTENNA HAND CONTROL
Part No. 210739
(Cal-Tronics Corporation)



FUNCTIONAL DESCRIPTION:

A transportable special purpose test set used to provide a complete functional test and alignment of the Antenna Hand Control, North American Aviation 14150-506. The antenna hand control is a component of the MG-4 Fire Control System. The operational test of all switches is performed by checking continuity with lamps in series with the switches. The test and alignment of the synchro resolvers is accomplished by applying an excitation voltage and observing the output voltage, amplitude, and phase as the hand control is moved through specified angles. The output voltage, amplitudes, and phases, from the synchro under test, are monitored by the vacuum tube voltmeter and oscilloscope.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The test set consists of a variable transformer, oscilloscope, voltmeter, and associated circuitry. The line voltage is adjusted so that the transformer secondary voltage is 25 volts, AC. The secondary voltage is used for phase reference and synchro excitation. When the hand control is moved through

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.			
PROCUREM'T INFO.:			
PROCUREM'T COG.:	DESIGN COG.: Commercial		
F.I.I.N.:	FUNCTIONAL CLASS. NO.: 10.2.2		

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U.S.A.

TEST SET, ANTENNA HAND CONTROL
Part No. 210739
(Cal-Tronics Corporation)

ELECTROMECHANICAL DESCRIPTION: (Continued)

azimuth and elevation, the limits of movement may be adjusted by mechanical stops in accordance with the in-phase or out of phase signals as monitored by the test set.

Power Supply: 115 volts, AC, single-phase, 400 cycles per second, 5 amperes; 28 volts, AC, 5 amperes; 115 volts, AC, 60 cycles per second, single-phase, 10 amperes.

MANUFACTURERS' OR CONTRACTORS' DATA:

Cal-Tronics Corporation, 11307 Hindry Avenue, Los Angeles 45, California; Contract AF 33(600)26479; Approximate Cost per Unit, $4,000.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

Instruction and Operating Manual, Antenna Hand Control Set, Cal-Tronics 210739.

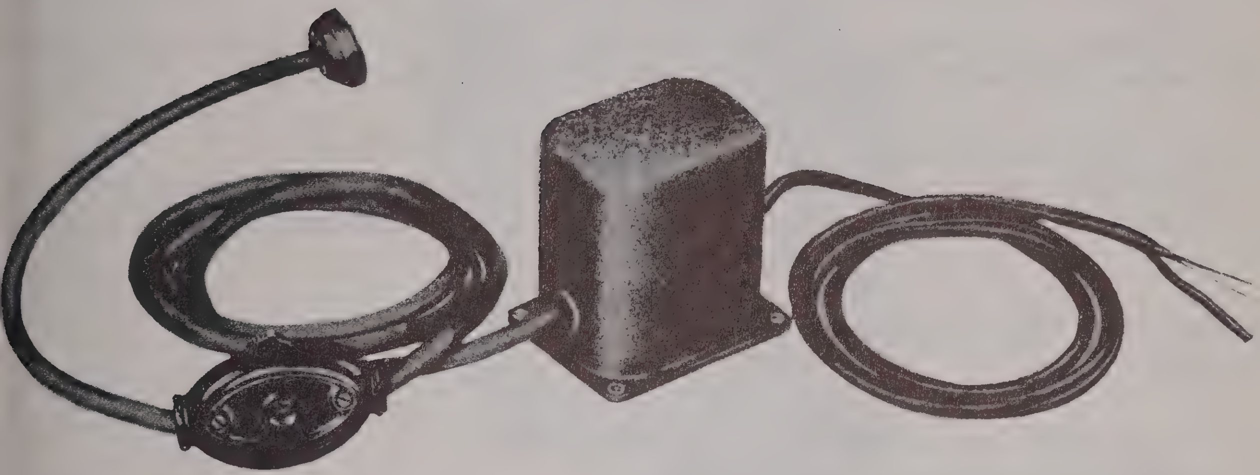
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Test Set, Antenna Hand Control, Cal-Tronics 210739			67	37	44	
	Including:						
1	Set Cables						
1	Oscilloscope DuMont 304A						
1	Vacuum Tube Voltmeter Hewlett-Packard 400D						

TRANSFORMER, ZERO-SETTING
Part No. 13251-1-A
(Eclipse-Pioneer Division of Bendix Aviation Corporation)



FUNCTIONAL DESCRIPTION:

A portable, general purpose equipment used to position the indicating synchro rotor within the stator at a defined reference position.

RELATIONSHIP TO OTHER EQUIPMENT:

Replaces the Electrical Zero Transformer Eclipse-Pioneer Part No. 13251-1-B, Part No. E-889 and Indicator Autosyn Part No. 13314-1-A.

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The transformer consists basically of a laminated iron core and a autotransformer winding. Permanently attached connecting cables are provided with color coded leads to match those of the synchro being tested. During tests the transformer is connected to a synchro and the synchro rotor seeks and rests at electrical zero. The synchro pointers are then pressed on the shaft in the zero position.

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.		Standard	
STOCK NOS.		(ASO)R88TO888-000-000	
PROCUREM'T INFO.: Drawing No. 13251-1-A			
PROCUREM'T COG.: Navy		DESIGN COG.: Commercial	
F.I.I.N.: 6625-511-2234		FUNCTIONAL CLASS. NO.: 10.2.2	
- Electronics Test Equipment - E.-P. 13251-1-A			

TRANSFORMER, ZERO-SETTING
Part No. 13251-1-A
(Eclipse-Pioneer Division of Bendix Aviation Corporation)

ELECTROMECHANICAL DESCRIPTION: (Continued)

Power Supply: None.

Input Voltage: 26 volts, AC, 400 cycles per second; 52 volts, AC, 800 cycles per second.

Output Voltage: 26 volts, AC, and 10.8 ±0.5 volts, AC, 400 cycles per second; 52 volts, AC, and 21.6 ±1.0 volts, AC, 800 cycles per second.

MANUFACTURERS' OR CONTRACTORS' DATA:

Eclipse-Pioneer Division, Bendix Aviation Corporation, 43 Williams Avenue, Teterboro, New Jersey; Contract No. N383s-79786A; Approximate Cost per Unit, $58.69.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

Manufacturers' Publication 53-28B.

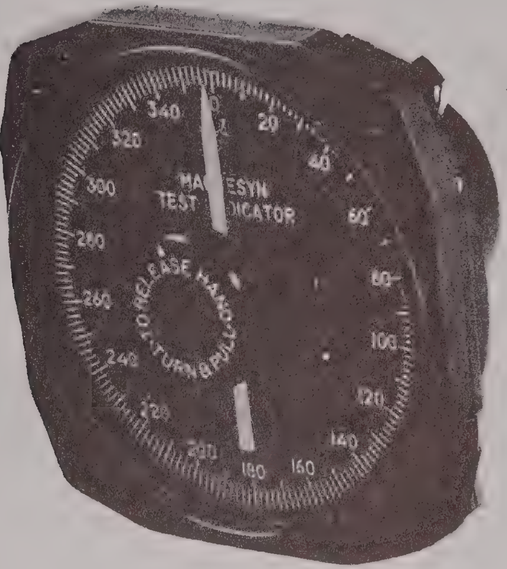
EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Transformer, Zero-Setting Eclipse-Pioneer 13251-1-A	Metal	(ASO)R88TO888-000-000				

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
1	Transformer, Zero-Setting Eclipse-Pioneer 13251-1-A	0.19	8-1/2	6-1/4	6-1/4	3.5

TEST INDICATOR, MAGNESYN
Part No. 13632-1A-A
(Eclipse-Pioneer Division of Bendix Aviation Corporation)



FUNCTIONAL DESCRIPTION:

A portable, general purpose instrument used as a standard to test all Eclipse-Pioneer linear and rotary Magnesyn transmitters. The instrument indicates the displacement in the transmitter under test.

RELATIONSHIP TO OTHER EQUIPMENT:

Replaces the Remote-Reading Compass Test Indicator Eclipse-Pioneer 13331-1-A, 13331-2-A, 13331-3-A, 13254-1A and the 13254-A.

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The indicator consists of a Magnesyn unit, a graduated dial, and a pointer. Use of a calibration card is required for maximum accuracy. The test indicator is designed primarily for panel installation and must be shock-mounted.

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.		Standard	
STOCK NOS.		(ASO)R88TO774-200-000	
PROCUREM'T INFO.: Drawing 13632-1A-A			
PROCUREM'T COG.: Navy		DESIGN COG.: Commercial	
F.I.L.N.: 4920-696-7183		FUNCTIONAL CLASS. NO.: 10.2.2	
- Electronics Test Equipment - E.-P. 13632-1A-A			

TEST INDICATOR, MAGNESYN
Part No. 13632-1A-A
(Eclipse-Pioneer Division of Bendix Aviation Corporation)

ELECTROMECHANICAL DESCRIPTION: (Continued)

Power Supply: None

Input Voltage: 26 volts, AC, 400 cycles per second; 52 volts, AC, 800 cycles per second, single-phase.

Power Rating: 1.7 volt-amps at 0.60 power factor.

Scale Range: 0 to 360 degrees in 2.0 degree increments.

Accuracy: ±2 degrees.

Maximum Acceleration:
- Vibration: 0.5 gravitational force.
- Constant: 1.0 gravitational force for short periods.

MANUFACTURERS' OR CONTRACTORS' DATA:

Eclipse-Pioneer Division, Bendix Aviation Corporation, 43 Williams Avenue, Teterboro, New Jersey; Contract No. N383s-70713; Approximate Cost per Unit, $122.00.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

Manufacturer's Publication S1-13632.

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
1	Test Indicator, Magnesyn Eclipse-Pioneer 13632-1A-A	2.05	22	15	11	46

TEST INDICATOR, MAGNESYN
Part No. 13632-1A-A
(Eclipse-Pioneer Division of Bendix Aviation Corporation)

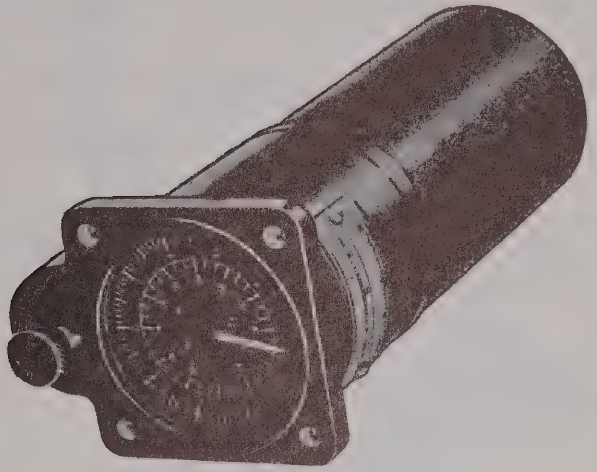
EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Test Indicator, Magnesyn, Eclipse-Pioneer No. 13632-1A-A	metal		18 dia.	11 dia.	6	35
1	Cable, QB 70696-1						
1	Cable, QB 70696-2						
1	Cable, QB 71235-1						

TESTER, AUTOSYN

Part No. 13643-1-A

(Eclipse-Pioneer Division of Bendix Aviation Corporation)



FUNCTIONAL DESCRIPTION:

A portable, general purpose instrument designed for use in testing transmitter and indicator synchros of various torque levels.

RELATIONSHIP TO OTHER EQUIPMENT:

Replaces the Eclipse-Pioneer Autosyn Tester 13647-1-A and 13695-1-A.

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The Autosyn Tester incorporates a vernier-type dial with a slow sweep pointer, allowing a high degree of readability. An amphenol cable connector is located on the rear of the instrument case to accommodate the connecting cable. A control located beneath the dial permits adjustment of the torque, via the dial.

Power Supply: None

Voltage Input: 26 volts, AC, 400 cycles per second, single-phase.

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.		Standard	
STOCK NOS.		(ASO)R88T0828-000-000	
PROCUREM'T INFO.: Drawing No. 13643-1-A			
PROCUREM'T COG.: Navy		DESIGN COG.:	Commercial
F.I.I.N.: 6625-511-6221		FUNCTIONAL CLASS. NO.: 10.2.2	
	- Electronics Test Equipment -		E.-P. 13643-1-A

TESTER, AUTOSYN
Part No. 13643-1-A
(Eclipse-Pioneer Division of Bendix Aviation Corporation)

ELECTROMECHANICAL DESCRIPTION: (Continued)

Dial Range: 0 to 360 degrees.

Accuracy:

As an Indicator: ±20 minutes at high torque; ±45 minutes at low torque.

As a Transmitter: ±15 minutes at high torque.

Torque: 2900 milligram-millimeters, 2200 milligram-millimeters and 800 milligram-millimeters per degree.

Dial Readability: ±6.0 minutes.

MANUFACTURERS' OR CONTRACTORS' DATA:

Eclipse-Pioneer Division, Bendix Aviation Corporation, 43 Williams Avenue, Teterboro, New Jersey; Contract No. N383s-28840; Approximate Cost per Unit, $364.00.

TUBE COMPLEMENT:

None

REFERENCE DATA AND LITERATURE:

1-13643 (T and TE Publication).

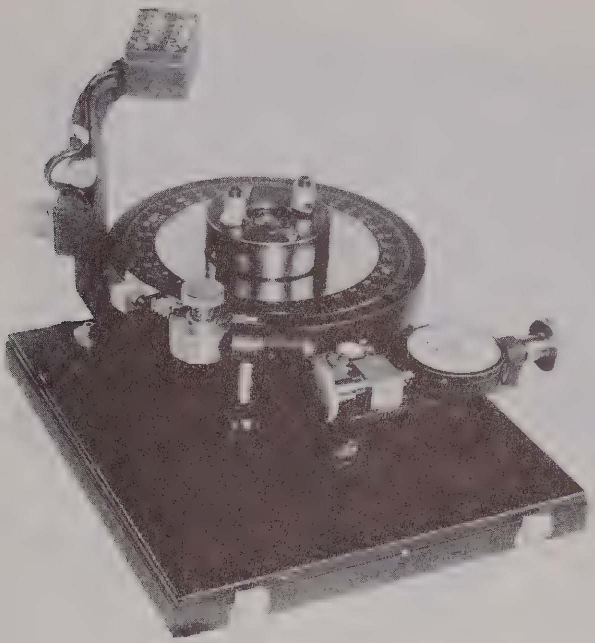
EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Tester, Autosyn Eclipse-Pioneer 13643-1-A	metal					

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
	Tester, Autosyn Eclipse-Pioneer 13643-1-A					

TESTER
Part No. 13644-1-A
(Eclipse-Pioneer Division)



FUNCTIONAL DESCRIPTION:

This tester is used for checking the angular displacement of autosyns.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Physical Description: The unit to be tested is mounted on a rotatable plate which functions as a dividing head. A precision collet holds the autosyn shaft. A micrometer adjustment with a direct reading dial is incorporated in the tester. Also included is a semi-automatic indexing mechanism for production testing at ten and two degree points.

Power Supply: 26 volts, AC, 338 to 442 cycles per second, single-phase;
(or)
52 volts, AC, 676 to 884 cycles per second, single-phase.

Accuracy: ±6 seconds of arc.

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-802118	R88TO931-055-000	
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.2.2	
- Electronics Test Equipment -		E.-P. 13644-1-A	

his project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Betheada, Md. - Multilithed in U.S.A

TESTER
Part No. 13644-1-A
(Eclipse-Pioneer Division)

MANUFACTURERS' OR CONTRACTORS' DATA:

Eclipse-Pioneer Division, Bendix Aviation Corporation, Teterboro, New Je
Contract No. AF 33(600)16314.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

Eclipse-Pioneer Division Information Bulletin, "Eclipse - Pioneer Service Equipment" No. S1-13644.

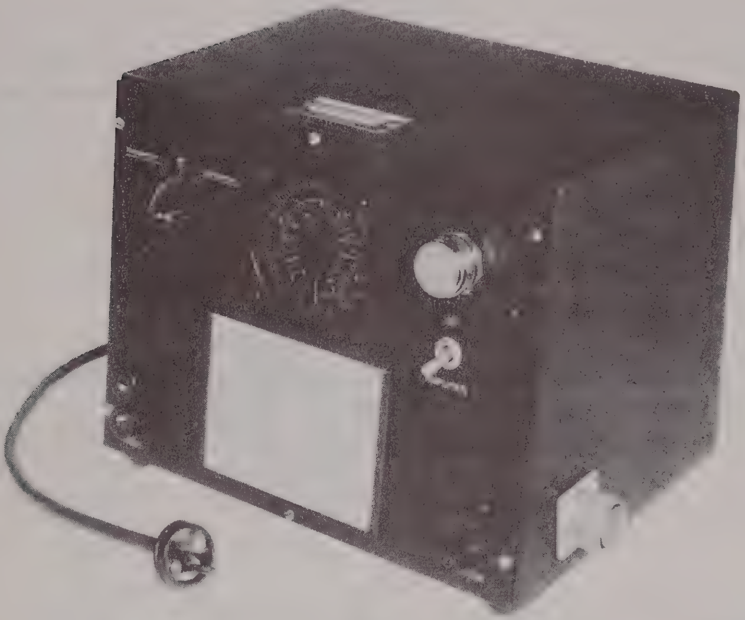
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			W Pa (L
			H	W	D	
1	Tester (Eclipse-Pioneer 13644-1-A)					48

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			We (Ll
				H	W	D	
1	Tester (Eclipse-Pioneer 13644-1-A)	Aluminum	7CAC-802118 R88TO931-055-000	9-3/4	14	12-1/2	3

INDICATOR
Part No. 13647-1-A
(Eclipse-Pioneer Division)



FUNCTIONAL DESCRIPTION:

This instrument is for testing either signal, synchro or differential type autosyn transmitters.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: A servoed autosyn indicator with a 2-3/4 inch dial and dual concentric pointers is incorporated in the unit. Also included is a vacuum tube torque amplifier and a locked autosyn. The autosyn is necessary for testing the differential type autosyns. External VTVM connections and the amplifier switch and pilot light are mounted on the panel.

Power Supply: 24 volts, AC, 338 to 442 cycles per second, single-phase;
(or)
52 volts, AC, 676 to 884 cycles per second, single-phase.

Dial Graduations: 6-minute increments.

Dial Range: 0° to 360°.

Response: Indicator will respond when the transmitter being tested is displaced 6 minutes of arc.

Accuracy: 10 minutes of arc.

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-802170	R88TO828-150-000	
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.2.2	
	- Electronics Test Equipment -		E.-P. 13647-1-A

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U.S.A

INDICATOR
Part No. 13647-1-A
(Eclipse-Pioneer Division)

MANUFACTURERS' OR CONTRACTORS' DATA:

Eclipse-Pioneer Division, Bendix Aviation Corporation, Teterboro, New Jersey.

TUBE COMPLEMENT:

1 JAN-6X4, 1 JAN-12AX7, 1 JAN-12AU7.

REFERENCE DATA AND LITERATURE:

Eclipse-Pioneer Division, Information Bulletin "Eclipse-Pioneer Service Test Equipment" No. S1-13647.

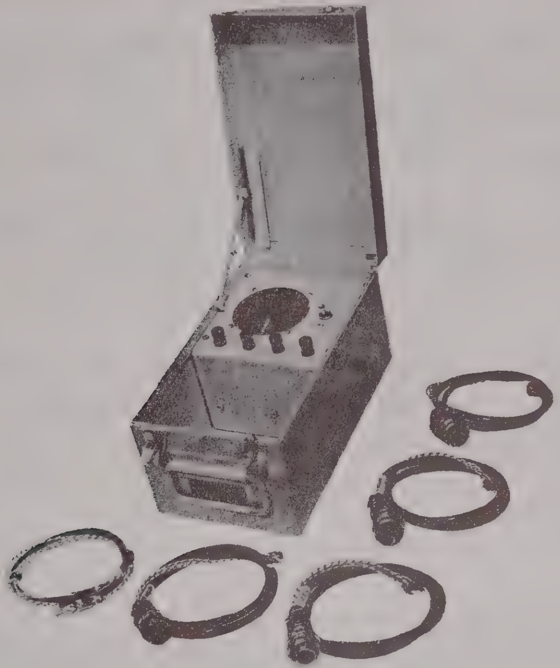
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
1	Indicator (Eclipse-Pioneer 13647-1-A)	2. 31	14-3/4	19	14-1/4	20

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Indicator (Eclipse-Pioneer 13647-1-A)		7CAC-802170 R88TO828-150-000	8-1/4	10-1/2	8-3/4	10

FIELD TESTER, SYNCHRO INSTRUMENT
Part No. 13669-2-A
(Eclipse-Pioneer Division of Bendix Aviation Corporation)



FUNCTIONAL DESCRIPTION:

A portable, general purpose equipment designed to perform functional tests on synchro indicators and transmitters in the field. Test results are indicated on the tester dial.

RELATIONSHIP TO OTHER EQUIPMENT:

The tester replaces Tester Hammett IT 2016 and Field Tester, Synchro Instruments 13669-1-A.

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The equipment consists basically of a test synchro (indicator and transmitter) and a transformer. The synchro under test is connected by an accessory cable to the four binding posts on the tester and power is applied to two of the posts. To impose electrical zero on the unit under test, power is fed, by means of a toggle switch, directly to the transformer which is tapped

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.		Standard	
STOCK NOS.		(ASO)R88T0828-025-000	
PROCUREM'T INFO.:			
PROCUREM'T COG.: Navy		DESIGN COG.: Commercial	
F.I.I.N.: 6625-342-3997		FUNCTIONAL CLASS. NO.: 10.2.2	
- Electronics Test Equipment -		E.-P. 13669-2-A	

FIELD TESTER, SYNCHRO INSTRUMENT
Part No. 13669-2-A
(Eclipse-Pioneer Division of Bendix Aviation Corporation)

ELECTROMECHANICAL DESCRIPTION: (Continued)

at 10.8 volts to deliver the signal. When the toggle switch is turned to the OFF position, power is fed to the test synchro which transmits the signal directly through the switch to the unit under test.

Power Supply: 26 ±1 volt, AC, 400 cycles per second ±10 cycles, single-phase, 5 amps.

Range: Dial calibrated 0 to 360 degrees in 2 degree increments.

Autosyn Torque: 2800 milligram-millimeters per degree.

Accuracy: ±2 degrees.

MANUFACTURERS' OR CONTRACTORS' DATA:

Eclipse-Pioneer Division, Bendix Aviation Corporation, 43 Williams Avenue, Teterboro, New Jersey; Contract No. N383s-34258A.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

NavAer 17-15C-532 (Handbook of Operation, Service, and Overhaul Instructions with Illustrated Parts). 2-13669 (T & TE Publication).

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
	Field Tester, Synchro Instrument, Eclipse-Pioneer 13669-2-A					

185

FIELD TESTER, SYNCHRO INSTRUMENT
PART NO. 13669-2-A
(Eclipse-Pioneer Division of Bendix Aviation Corporation)

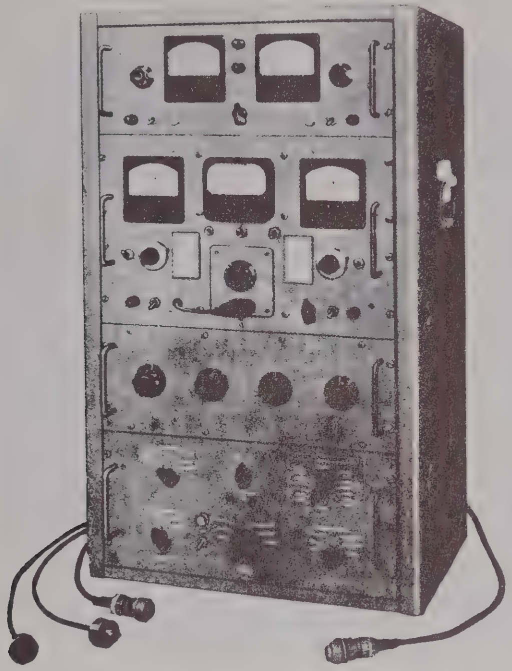
QUIPMENT SUPPLIED:

uant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches) H	W	D	Weight (Lbs.)
1	Field Tester, Synchro Instrument, Eclipse-Pioneer 13669-2-A	metal	(ASO)R88T0828-025-000	6	6	10-1/2	6
1	Calibration Table						
1	Cable QB72508-1						
1	Cable QB72507-1						
1	Cable QB72507-2						
1	Cable QB72507-3						
1	Cable QB72506-1						

TEST SET, PROPORTIONAL VOLTAGE

Part No. 13850-1-A

(Eclipse-Pioneer Division of Bendix Aviation Corporation)



FUNCTIONAL DESCRIPTION:

A general purpose equipment used to test 400 cycle per second synchros requiring excitation currents of 1 amp or less. The equipment is used to set electrical zero, stabilize iron cores and perform angular accuracy tests. Results are indicated by meters located on the front panel of the instrument.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The equipment consists of four chassis mounted in an enclosed electrical rack. The power chassis contains the controls, meters and circuits required to regulate the power sources used by the equipment. Two separate circuits are included, a 60 cycle per second circuit which supplies power to the instrument mounted on the null-meter panel, and a 400 cycle per second circuit which supplies excitation to the synchro under test and a reference voltage to

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.		Standard	
STOCK NOS.		(ASO)R88TO950-490-000	

PROCUREM'T INFO.:

PROCUREM'T COG.: Navy

DESIGN COG.: Commercial

F.I.I.N.: 6625-535-8521

FUNCTIONAL CLASS. NO.: 10.2.2

- Electronics Test Equipment - E.-P. 13850-1-A

TEST SET, PROPORTIONAL VOLTAGE
Part No. 13850-1-A
(Eclipse-Pioneer Division of Bendix Aviation Corporation)

ELECTROMECHANICAL DESCRIPTION: (Continued)

the null meter. The null-meter chassis contains two null meters, a band-pas filter, a vacuum-tube voltmeter, and the control and switching circuits neces sary to operate them. The bridge chassis contains switching circuits whic permit the output of the proportional voltage bridge to be varied by inserting re sistance values from 0 to 10,000 ohms. This allows electrical angles, eithe whole or fractional, to be set through a range of 0 to 60 degrees. Six rotar type selector switches are mounted on the switching chassis to provice the nec essary test circuit configurations between the tester and the unit under test.

Power Supply: 110 to 120 volts, AC, 396 to 404 cycles per second, single-phase 2 amps minimum; 112 to 122 volts, AC, 59 to 61 cycles per second, single phase, 2 amps minimum.

MANUFACTURERS' OR CONTRACTORS' DATA:

Eclipse-Pioneer Division, Bendix Aviation Corporation, 43 Williams Avenue Teterboro, New Jersey; Contract No. N383-45442A; Approximate Cost per Unit $5233.21.

TUBE COMPLEMENT:

3 6X4W, 1 6100/6C4WA, 4 5751.

REFERENCE DATA AND LITERATURE:

NavAer 17-15C-530 Handbook of Operation, Service, and Overhaul Instruction with Parts Breakdown.

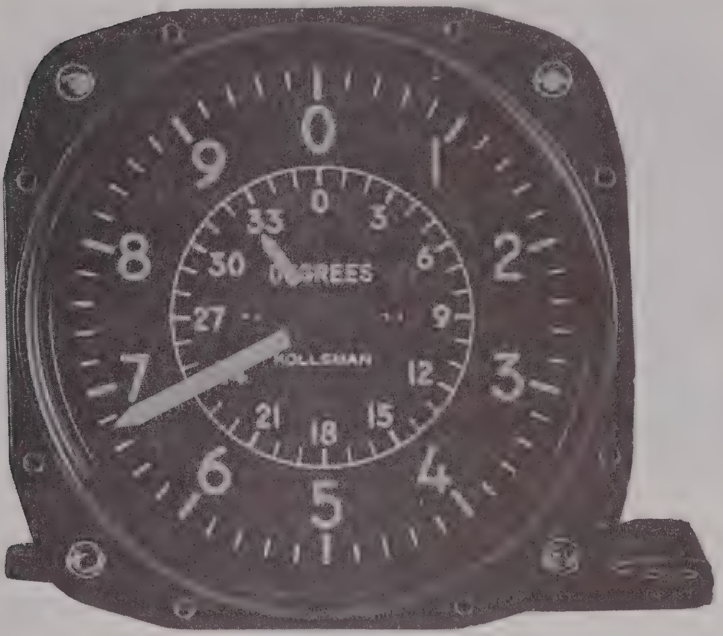
EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Test Set, Proportional Voltage Eclipse-Pioneer 13850-1-A	metal	(ASO)R88TO950-490-000	37	23	16	120

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
1	Test Set, Proportional Voltage, Eclipse-Pioneer 13850-1-A	34.51	45	30	25	168

INDICATOR, SERVO
Part No. TE 5709
(Kollsman Instrument Corporation)



FUNCTIONAL DESCRIPTION:

This indicator is used in testing and calibrating synchros used in the C-2 True Airspeed and Mach Number Computer. It is intended to indicate, in degrees, the outputs of the absolute pressure and differential pressure transmitters, and the outputs of the logarithmic absolute pressure and true airspeed transmitting synchros.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The servo indicator contains a synchro and motor which drive the indicator shaft through a mechanical gear train. The outer edge of the indicator dial is divided into fifths of a degree increments with a total revolution of the long hand equaling ten degrees. The inner part of the indicator dial is divided into ten-degree increments with a total revolution of the short hand equaling 360 degrees. With each revolution of the outer hand, the inner hand moves one division, or ten degrees. An AN type connector is used to connect the servo indicator to the Servo Amplifier TE 5710.

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.			
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.2.2	
	- Electronics Test Equipment -		Kollsman TE 5709

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U.S.A.

INDICATOR, SERVO
Part No. TE 5709
(Kollsman Instrument Corporation)

ELECTROMECHANICAL DESCRIPTION: (Continued)

Power Supply: The servo amplifier delivers the power necessary to operate the indicator.

MANUFACTURERS' OR CONTRACTORS' DATA:

Kollsman Instrument Corporation, 80-08 45th Avenue, Elmhurst 73, New York. Contract No. AF 33(600)27206; Contract Date, 20 May 1954; Approximate Cost per Unit, $410.00.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 5F5-3-5-3 (Overhaul Instructions).

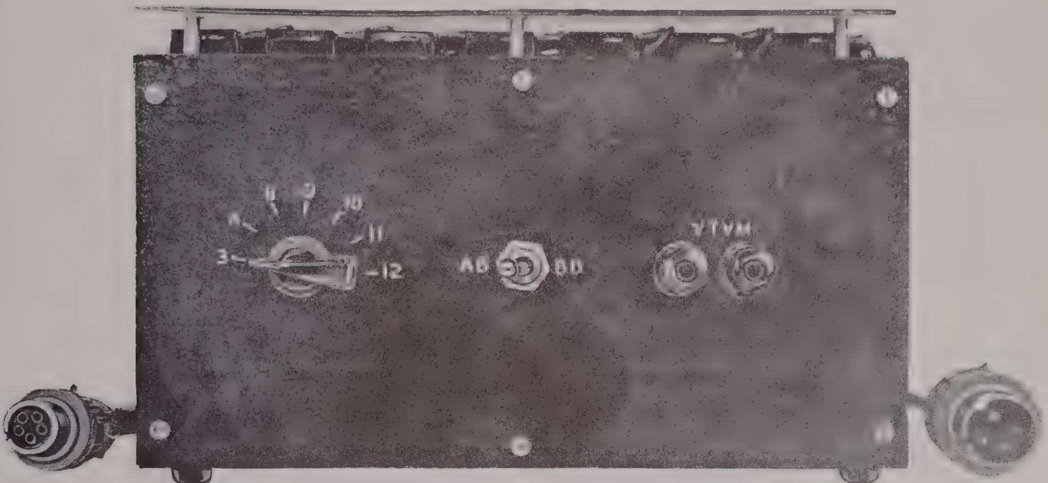
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weigh Packe (Lbs.)
			H	W	D	
1	Indicator, Servo (Kollsman TE 5709)	0.19	6	6	9	5

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Indicator, Servo (Kollsman TE 5709)			3-1/2	4-1/2	7-1/8	2-3/8

SWITCH, SYNCHRO NULL CHECK
Part No. TE 5711
(Kollsman Instrument Corporation)



FUNCTIONAL DESCRIPTION:

This unit is used in checking the null values of the transmitting synchros of the C-2A True Airspeed and Mach Number Computer.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The circuit consists of a step-down, auto transformer providing voltage which is distributed by a ganged 5-pole, 7-position switch to the equipment under test. A double-pole, double-throw switch is used to connect the test circuit to the VTVM jacks on the panel. Electrical connections to the equipment under test are made through seven AN type connectors.

Power Supply: 26 volts, AC, 400 cycles per second, single-phase.

Output Voltage: 9 volts, AC, 400 cycles per second, single-phase.

MANUFACTURERS' OR CONTRACTORS' DATA:

Kollsman Instrument Corporation, 80-08 45th Avenue, Elmhurst 73, New York; Contract No. AF 33(600)27206; Contract Date, 20 May 1954; Approximate Cost per Unit, $290.00.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 5F5-3-5-3 (Overhaul Instructions).

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-813385		
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.2.2	
	- Electronics Test Equipment -		Kollsman TE 5711

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U.S.A.

192

SWITCH, SYNCHRO NULL CHECK
Part No. TE 5711
(Kollsman Instrument Corporation)

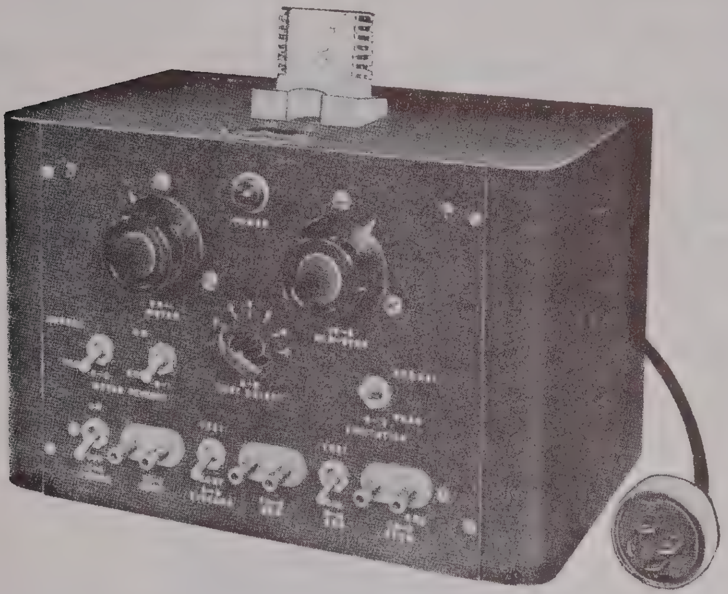
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
1	Switch, Synchro Null Check (Kollsman TE 5711)	1.25	11	14	14	15

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Switch, Synchro Null Check (Kollsman TE 5711)		7CAC-813385	6	9	9	8-1/2

ANALYZER-TURN GENERATOR
Part No. T-100909
(Sperry Gyroscope Company)



FUNCTIONAL DESCRIPTION:

A portable unit which is used to test the turn generator assemblies prior to reinstallation in the type E-4 Automatic Pilot. The analyzer provides a means for checking the synchro and generator output, polarity, excitation, and motor direction-of-rotation.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: A special mount is provided on the top of the analyzer for holding the unit under test. All operating controls are located on the front panel of the analyzer. Input power is controlled and applied to the analyzer by two variable transformers. Each variable transformer is connected to a transformer in the analyzer circuit. By varying the setting of the variable transformers the output voltages of these transformers are controlled. The output voltage of one transformer is applied to the motor control field of the turn generator assembly through the motor reversing switch. Output voltage of the other transformer supplies excitation to the synchro of the turn generator assembly. Terminal

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-043540		
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.2.2	
	- Electronics Test Equipment -Sperry Part No. T-100909		

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ANALYZER-TURN GENERATOR
Part No. T-100909
(Sperry Gyroscope Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)

jacks are provided for attaching a vacuum tube voltmeter, an ohmmeter, or a oscilloscope for testing. Operational qualities of the unit under test are determined by means of these instruments.

Power Supply: 115 volts, AC, 400 cycles per second, single phase.

MANUFACTURERS' OR CONTRACTORS' DATA:

Sperry Gyroscope Company, Great Neck, Long Island, New York; Contract No. AF 33(604)7931; Approximate Cost per Unit, $1645.00.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 33D3-4-13-1 (Operation and Service Instructions).

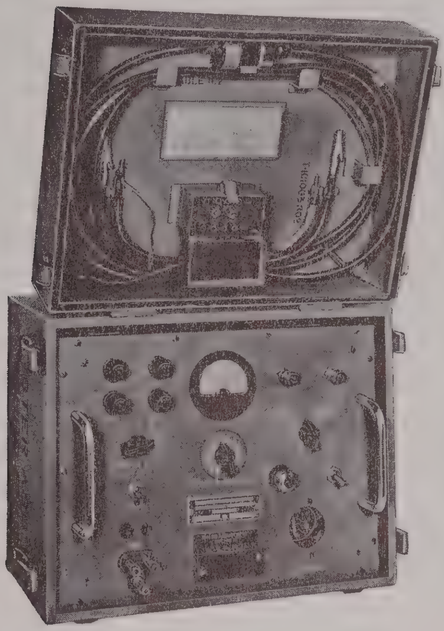
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Analyzer - Turn Generator Sperry Part No. T-100909	Metal	7CAC-043540	12	12-1/2	8	

SYNCHRO SIGNAL TESTER
Part No. T-101003
(Sperry Gyroscope Company)



FUNCTIONAL DESCRIPTION:

A portable general purpose test instrument designed to measure the amplitude and phase of AC voltages in computer amplifiers, and to set various types of synchros to electrical zero. This equipment is also used to measure the voltage amplitude and phase shift of synchro systems under test. The magnitude of the component voltage at a given phase shift with respect to the line voltage may also be obtained with this tester.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The input circuit consists of a balanced voltage divider with a six-position selector switch. A portion of the input voltage is fed to the first

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-801908		
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.2.2	
	- Electronics Test Equipment - Sperry Part No. T-101003		

s project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

SYNCHRO SIGNAL TESTER
Part No. T-101003
(Sperry Gyroscope Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)

stage of a push-pull amplifier, which in turn is coupled by a cathode follower circuit to a balanced high gain degenerative feedback amplifier. Through a five-to-one ratio transformer, this amplifier output is fed to a phase sensitive demodulator. The output from the demodulator is read on the zero center DC microammeter, calibrated in AC volts.

The synchro rotor output voltage is of constant amplitude and of variable phase, the phase being directly a function of rotor position. If the synchro rotor position is set so that its output voltage is in phase with the line voltage, the phase of any signal input may be obtained by noting the maximum voltage reading on the meter. This meter voltage is highest when both the line voltage and the input signal are in phase. Therefore, the adjustment of a "Reference Phase Angle" selector enables the amount of phase rotation necessary to bring the two voltages into phase to be determined.

Power Supply: 115 volts, AC, single-phase, 400 cycles per second, 75 watts.

Voltage Divider: Total input resistance of 1.2 megohms with six ranges of 0.5, 1.5, 5, 15, 50, and 150 volts AC.

Accuracy: ±5% full scale reading, within the upper two-thirds of the voltmeter scale.

MANUFACTURERS' OR CONTRACTORS' DATA:

Sperry Gyroscope Company, Division of the Sperry Corporation, Great Neck, Long Island, New York.

TUBE COMPLEMENT:

2 JAN-OA2, 2 JAN-6AK5, 1 JAN-6AL5, 3 JAN-6J6, 1 JAN-6X4.

REFERENCE DATA AND LITERATURE:

TO 33D5-5-7-1 (Operation and Service Instructions).
TO 33D5-5-7-4 (Parts Catalog).

SHIPPING DATA:

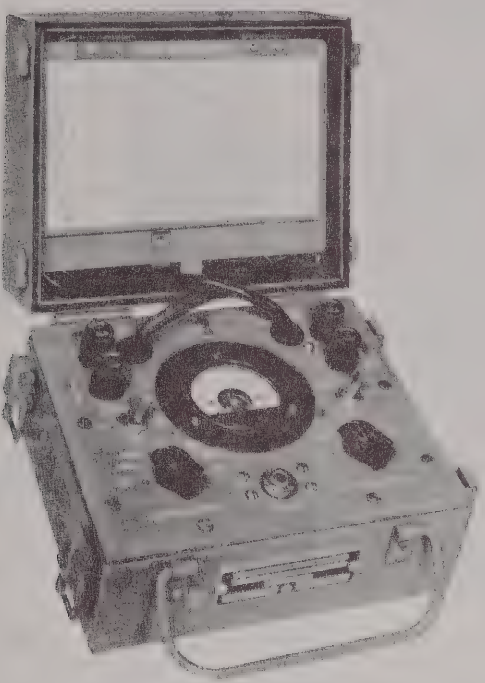
No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Over-all Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
Sperry Part No. T-101003 - Electronics Test Equipment -						

SYNCHRO SIGNAL TESTER
Part No. T-101003
(Sperry Gyroscope Company)

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Over-all Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Synchro Signal Tester Sperry Part No. T-101003		7CAC-801908	12-1/2	15	9-1/4	22
1	Power Cable Assembly						
2	Test Lead Assembly						

SYNCHRO ZEROING TESTER ASSEMBLY
Part No. T-101020
(Sperry Gyroscope Company)



FUNCTIONAL DESCRIPTION:

A portable field test instrument designed to facilitate the setting of a synchro to electrical zero so that a common reference point is established for the synchros in a given data repeater or servo system. A voltmeter is included in the tester and is used for observing null or maximum voltages.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: A control switch and a selector switch permit selection of the measuring circuits, while a voltage divider circuit controls the range of the voltmeter. Synchro excitation voltages of 115 and 17.5 volts, 400 cycles, are provided from an autotransformer.

Power Supply: 115 volts, AC, single-phase, 380 to 420 cycles per second, approxi-

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-801909		
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.2.2	
	- Electronics Test Equipment - Sperry Part No. T-101020		

his project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U.S.A.

SYNCHRO ZEROING TESTER ASSEMBLY
Part No. T-101020
(Sperry Gyroscope Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)

mately 10.5 volt-amperes.

Meter Range: 0.3 to 300 volts in six steps: 0.3 to 1.5 volts X1, X2, X10, X30, X100, X200.

MANUFACTURERS' OR CONTRACTORS' DATA:

Sperry Gyroscope Company, Division of the Sperry Corporation, Great Neck, Long Island, New York.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 33D5-5-14-1 (Operation and Service Instructions).
TO 33D5-5-14-4 (Parts Catalog).

SHIPPING DATA:

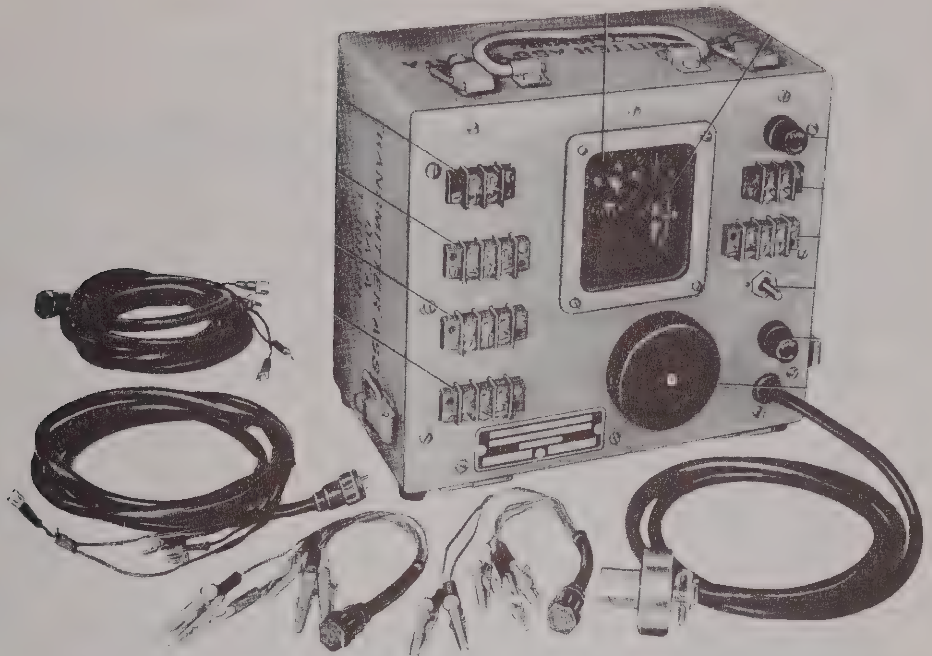
No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Synchro Zeroing Test Assembly Sperry Part No. T-101020		7CAC-801909	6-3/4	8-1/2	5-1/2	3.5
1	Adapter Cable Assembly						
1	Voltmeter Leads Cable Assembly						

Sperry Part No. T-101020 - **Electronics Test Equipment** -

TRANSMITTER, ASSEMBLY, DATA
Part No. T-101021
(Sperry Gyroscope Company)



FUNCTIONAL DESCRIPTION:

A portable instrument which is used for checking the various synchro systems of the A-1A Bombing-Navigational Computer. Measured data is set into the tester, either manually or by motor, through independently controlled synchros, to be transferred into the synchro system under test. The tester provides a means of checking the accuracy with which the synchro system being tested responds to this measured input.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: All operating controls and terminal block connections are located on the front panel of the transmitter. Each of the four synchros within the transmitter are connected to a corresponding terminal block to which the leads of the synchro to be tested are connected. With the test leads properly attached, the transmitter is energized and the desired settings made on the coarse and fine synchro dials. A measured rotation of the tester synchro is compared with the

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-866900		
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.2.2	
	- Electronics Test Equipment -		Sperry T-101021

s project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U.S.A.

TRANSMITTER, ASSEMBLY, DATA
Part No. T-101021
(Sperry Gyroscope Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)
resultant number of degrees of rotation of the synchro under test. The error signal in the servo system of the unit under test may also be observed to see by what amount it lags or leads the transmitter, and also for smoothness and proper operation.

Power Supply: 27 volts, DC.

MANUFACTURERS' OR CONTRACTORS' DATA:
Sperry Gyroscope Company, Division of the Sperry-Rand Corporation, Great Neck, Long Island, New York; Contract No. AF 33(600)6565.

TUBE COMPLEMENT:
None.

REFERENCE DATA AND LITERATURE:
TO 33D5-5-15-1 (Operation and Service Instructions).
TO 33D5-5-15-4 (Parts Breakdown).

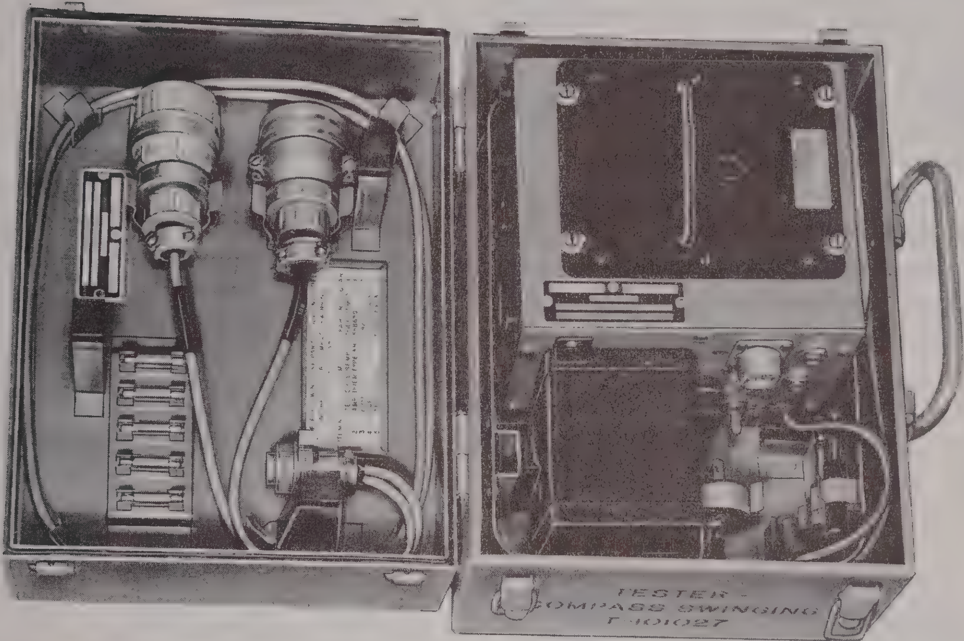
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Transmitter, Assembly, Data (Sperry T-101021)	Aluminum	7CAC-866900	9-1/4	10-3/4	7-1/2	12
	Including:						
1	Power Cable						
2	Test Lead						
2	Test Lead Adapter						

COMPASS SWINGING TESTER
Part No. T-101027
(Sperry Gyroscope Company)



UNCTIONAL DESCRIPTION:

A portable tester used to align and compensate the flux valve of the Remote Com-
ass Transmitter C-3. This tester permits aligning of the flux valve without ener-
izing the type A-1A Bombing-Navigational Computer. It also permits fast compass
winging. The equipment is designed to monitor the magnetic heading error signal
rom the flux valve synchro which is viewed on an oscilloscope. The signal may be
ulled out by rotating the receiver synchro and the heading may then be read on the
rue Heading Transmitter B-1.

ELATIONSHIP TO OTHER EQUIPMENT:

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-802710		
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.2.2	
	- Electronics Test Equipment -Sperry Part No. T-101027		

project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Betheada, Md. - Multilithed in U.S.A.

COMPASS SWINGING TESTER
Part No. T-101027
(Sperry Gyroscope Company)

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The power supply circuit converts the input power to the necessary AC and DC power requirements for the tester. A rectifier and filter circuit provide a DC voltage, with a nearly constant magnitude, for the KH amplifier. The input signal to the amplifier originates in the flux valve synchro of the True Heading Transmitter B-1. A phase shifting network is incorporated in the amplifier so that a linear amplifier characteristic is obtained. The output of the amplifier is fed through a second filter circuit which is tuned to pass only the 800-cycles per second component. This signal is directed to the vertical plate of an oscilloscope. A reference signal (which is also used for excitation of the flux valve) is directed to the horizontal plate of the oscilloscope. By adjusting the signal on the vertical plate, it is thus possible to obtain a null position of the two signals on the scope.

Power Supply: 115 volts, AC, 400 cycles per second, single-phase, 25 watts.

Power Output: 6.3 volts, AC; 150 volts, DC; 300 volts, DC; 115 volts, 400 cycles per second, AC; and 23.5 volts, 400 cycles per second, AC.

MANUFACTURERS' OR CONTRACTORS' DATA:

Sperry Gyroscope Company, Great Neck, Long Island, New York.

TUBE COMPLEMENT:

1 JAN-6X4, 1 JAN-6AK5, 1 JAN-OA2, 2 JAN-6AQ5.

REFERENCE DATA AND LITERATURE:

TO 33D5-4-2-1 (Operation and Service Instructions).
TO 33D5-4-2-4 (Parts Catalog).

SHIPPING DATA:

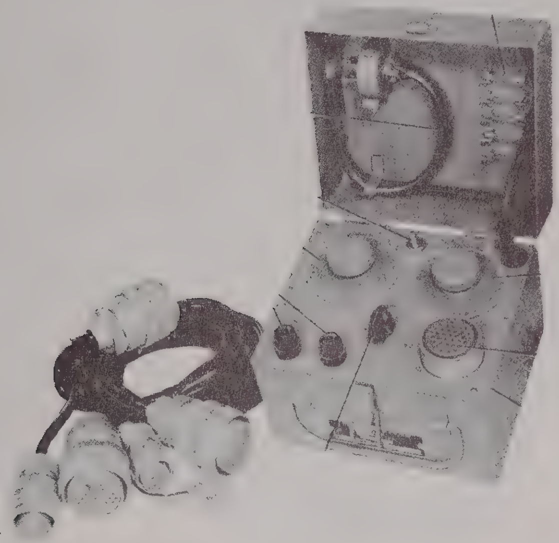
No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Over-all Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
Sperry Part No. T-101027 - Electronics Test Equipment -						

COMPASS SWINGING TESTER
Part No. T-101027
(Sperry Gyroscope Company)

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Compass Swinging Tester (Sperry Part No. T-101027)		7CAC-802710	9	11-5/8	7-1/8	14
	Including:						
1	Power Supply Assembly Amplifier Type KH						
1	Power Cable						
2	Test Lead						
1	Carrying Case and Cover						

MASTER SYNCHRO TESTER ASSEMBLY
Part No. T-101031
(Sperry Gyroscope Company)



FUNCTIONAL DESCRIPTION:

A portable tester which checks the accuracy of certain repeater synchros contained in the A-1A Bombing-Navigational Computer. The synchros contained in the tester itself are considered the true reference. With this as a standard, any discrepancies occuring in the computer synchros may be determined.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: Connection is made between the tester and the equipment under test by means of a multi-receptacle cable. All of the repeater synchros in the computer are attached to the tester simultaneously, but transmission is completed to each repeater individually by the use of a selector switch. Since the repeater synchro is electrically connected to the tester it will assume the same position as the tester synchro. Rotation of the adjustment dial varies the

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-801865		
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.2.2	
- Electronics Test Equipment - Sperry Part No. T-101031			

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

MASTER SYNCHRO TESTER ASSEMBLY
Part No. T-101031
(Sperry Gyroscope Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)

output signal of the tester synchro which varies the repeater accordingly. The accuracy of the repeater may be checked against the known proper reference of the tester by use of a conversion chart supplied with the tester.

Power Supply: 115 volts, AC, 400 cycles per second. When testing the navigational control repeater of systems with serial numbers 71 and up, an additional 26 volts, AC, power supply is required.

MANUFACTURERS' OR CONTRACTORS' DATA:

Sperry Gyroscope Company, Great Neck, Long Island, New York.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 33D5-5-18-1 (Operation and Service Instructions).
TO 33D5-5-18-4 (Parts Breakdown).

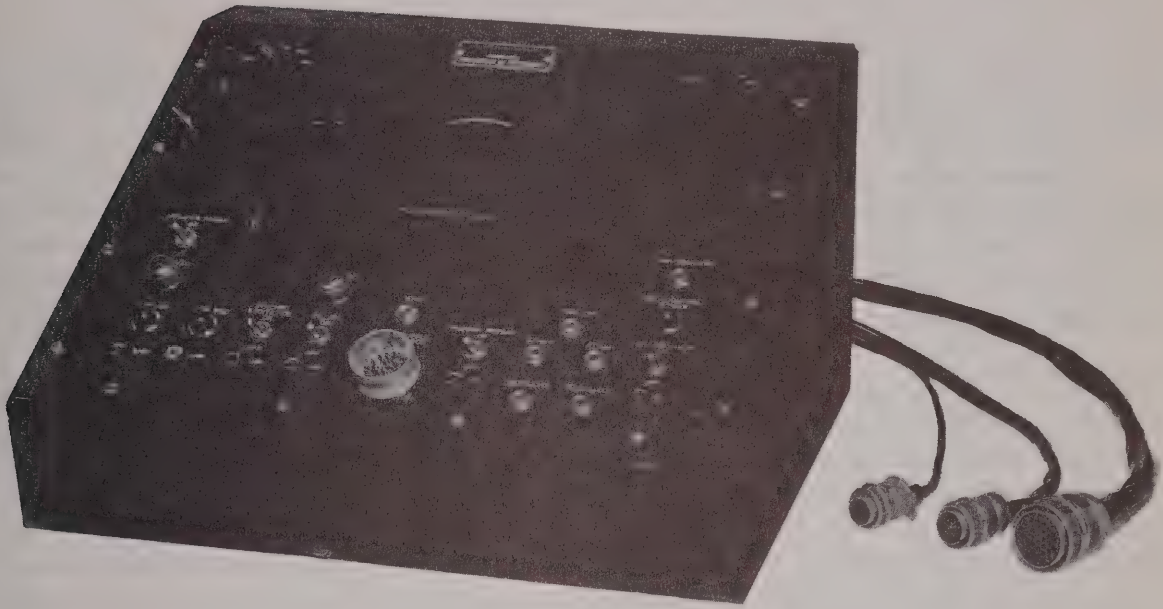
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
1	Master Synchro Tester Assembly Sperry Part No. T-101031					

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Master Synchro Tester Assembly Sperry Part No. T-101031		7CAC-801865				
1	Carrying Case			10	10	7-5/8	
1	Multi-Receptacle Synchro Cable						

ANALYZER, NAVIGATIONAL CONTROL
Part No. T-101046
(Sperry Gyroscope Company)



FUNCTIONAL DESCRIPTION:

A portable depot level test instrument designed for use in testing the repeater synchros of the Navigation Control unit of the A-1A Bombing Navigational Computer. The analyzer is used with the navigation control, a Navigation Control Tester Assembly T-101025, and a Power Supply Junction Box T-101126, Together these units check the synchros for the north and east components of ground distance to the aim point and of wind velocity. The analyzer provides test jacks for measuring the voltage in the field windings of the latitude and longitude motors of the Navigation Control. It also serves as a junction box between the three units with which it is used.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: A switching arrangement in the analyzer controls the supplying of power to the Navigation Control latitude and longitude motors. This, in effect, replaces the transmitter synchros of the A-1A Computer Amplifier. Two amplifiers in the analyzer replace the latitude and longitude amplifiers of the compu-

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-040227		
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.2.2	
	- Electronics Test Equipment -		Sperry T-101046

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

ANALYZER, NAVIGATIONAL CONTROL
Part No. T-101046
(Sperry Gyroscope Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)

ter. The analyzer selects either longitude or latitude information to be supplied by the Tester Assembly T-101025 to the Navigation Control. A synchro excitation switch provides for the energizing of the X_N, X_E, W_N, W_E magnetic variation and sine latitude synchro rotors in the Navigation Control. A selector switch successively connects the stator of the analyzer with the stators of the Navigation Control synchros. By making the proper synchro selection with the "X_E, X_N, W_E, W_N," and "$X_N + \int V_{GN}dt$," "$X_E + \int V_{GE}dt$" selector switches and by rotating the transmitter synchro, "MAG Variation Receiver," and differential synchro control knobs, the analyzer may be used to check the Navigation Control X_N, X_E, W_N, W_E magnetic variation, and sine latitude synchros.

Power Supply: 115 volts, AC, 400 cycles per second, single and three-phase; 26.5 volts, AC, 400 cycles per second; 6.3 volts, AC, 400 cycles per second; 300 volts, DC; 175 volts, DC; 27 volts, DC; 115 volts, AC, 60 cycles per second, single-phase.

MANUFACTURERS' OR CONTRACTORS' DATA:

Sperry Gyroscope Company, Division of the Sperry-Rand Corporation, Great Neck, Long Island, New York; Contract No. AF 33(038)14787.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 33D5-5-51-1 (Operation and Service Instructions).
TO 33D5-5-51-4 (Illustrated Parts Breakdown).

SHIPPING DATA:

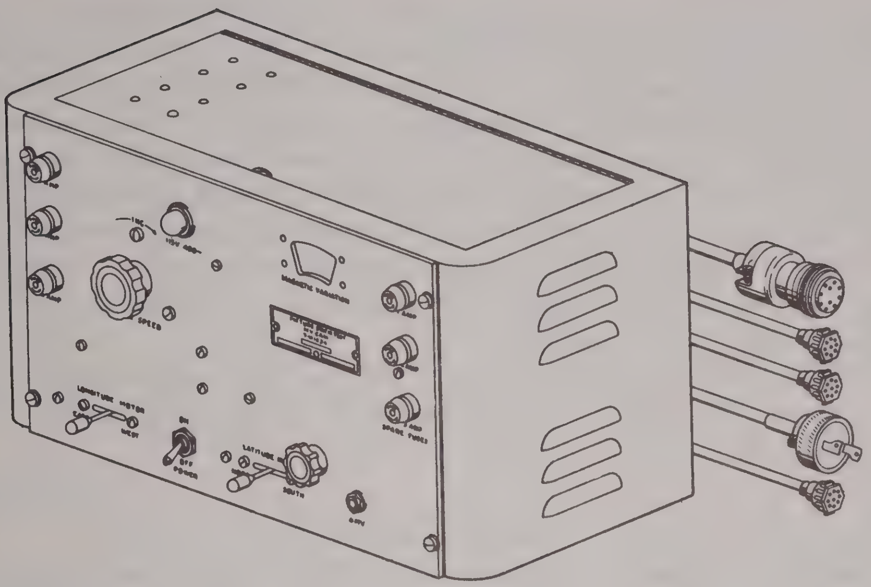
No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

ANALYZER, NAVIGATIONAL CONTROL
Part No. T-101046
(Sperry Gyroscope Company)

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Analyzer, Navigational Control (Sperry T-101046)		7CAC-040227	11-1/2	20-1/4	16	25

MAGNETIC VARIATION CAM STATIC TEST FIXTURE
Part No. T-101234
(Sperry Gyroscope Company)



FUNCTIONAL DESCRIPTION:

A portable depot level tool used to drive the latitude and longitude motors in the navigational control in order to calibrate the magnetic variation cam subassembly.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: Voltage from the power source is supplied to the variable transformer in the fixture and also to a terminal of the navigation control. The voltage at the terminal is applied to the rotor windings of the longitude and latitude motors in the navigational control. The voltage applied to the variable transformer is picked off by a wiper arm and connected to the field winding of both the longitude and latitude motors in the fixture. Switches on the fixture control the direction of rotation of longitude and latitude motors in the navigational control.

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-293905		
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.2.2	
	- Electronics Test Equipment -		Sperry T-101234

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

MAGNETIC VARIATION CAM STATIC TEST FIXTURE
Part No. T-101234
(Sperry Gyroscope Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)

The Autosyn Power Supply T-101125 supplies 26.5 volt, 400 cycle, AC, power to the rotor of the magnetic variation synchro. The rotor of this synchro is driven by the gearing of the magnetic variation cam, and the induced voltage in the stator windings of the synchro is coupled to the stator windings of the synchro transformer in the fixture. The error signal, the difference between the position of the two rotors, may be measured by a voltmeter plugged into a jack on the fixture. This error signal may be cancelled out by revolving the rotor until a minimum voltage is read on the meter. The magnetic variation is read on the "Magnetic Variation" dial on the fixture.

Power Supply: 115 volts, AC, 400 cycles per second, single-phase from external source; 26.5 volts, AC, 400 cycles per second, single-phase from Autosyn Power Supply T-101234.

MANUFACTURERS' OR CONTRACTORS' DATA:

Sperry Gyroscope Company, Division of the Sperry-Rand Corporation, Great Neck, Long Island, New York; Contract AF33(038)14787.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 33D5-5-80-1 (Operation and Service Instructions).

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

MAGNETIC VARIATION CAM STATIC TEST FIXTURE
Part No. T-101234
(Sperry Gyroscope Company)

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Magnetic Variation Cam Static Test Fixture (Sperry T-101234)	Metal	7CAC-293905	8-3/8	16-3/4	9-1/2	15
1	Cable (Sperry T-101234-800)						
1	Cable (Sperry T-101234-900)						
1	Cable (Sperry T-101234-901)						
1	Cable (Sperry T-101234-902)						
1	Cable (Sperry T-101234-903)						

VOLTAGE COMPARATOR
Part No. 1,000,117
(Sperry Gyroscope Company)

FUNCTIONAL DESCRIPTION:

A portable instrument which is used at depot-level maintenance to check the linearity of microsyns in the elevation and deflection channels of the computer and sight head which are components of the type A-4 Gyro Computing Sight (Gun-Bomb-Rocket).

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The circuitry of the comparator consists of two variable resistors (a "sensitivity control" and a "linearity control"), a phase shifting network, and a band pass filter. The comparator is used in conjunction with a computer analyzer and an externally connected vacuum tube voltmeter. An excitation current from the computer analyzer passes through the two variable resistors in the comparator. The voltage from the "linearity control" resistor is fed to the phase shifting network where the phase is adjusted to permit sharper null indications. From there it goes to the band pass filter. The excitation voltage from "sensitivity control" flows through the microsyn under test and into the band pass filter. The band pass filter rejects the harmonics of the 400 cycles

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-210595		
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.2.2	
		- Electronics Test Equipment - Sperry Part No. 1,000,117	

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

VOLTAGE COMPARATOR
Part No. 1, 000, 117
(Sperry Gyroscope Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)

per second for a sharper null indication. These two voltage inputs to the band pass filter can be made equal by adjustment of the two variable resistors, at which time a null indication is obtained on the externally connected vacuum tube voltmeter. The microsyn under test is set at an angular deflection of 100 mils and the microdial of the linearity control is at a standard setting (1000). The comparator is adjusted to obtain a null on the vacuum tube voltmeter. This establishes a reference voltage across the linearity control which corresponds to 100 mils deflection of the microsyn under test. The microsyn is then turned to the angular deflection at which linearity is to be checked. The resulting voltage is balanced out by adjusting the comparator controls to obtain a null on the vacuum tube voltmeter. The reading of the microdial on the linearity control is then an indication of the linearity of the unit under test.

Power Supply: A current of 240 milliamperes, 400 cycles per second is supplied by the computer analyzer.

MANUFACTURERS' OR CONTRACTORS' DATA:

Sperry Gyroscope Company, Great Neck, Long Island, New York; Contract No. AF 33(038)14794.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 33D5-14-5-1 (Operation and Service Instructions).
TO 33D5-14-5-4 (Parts Breakdown).

SHIPPING DATA:

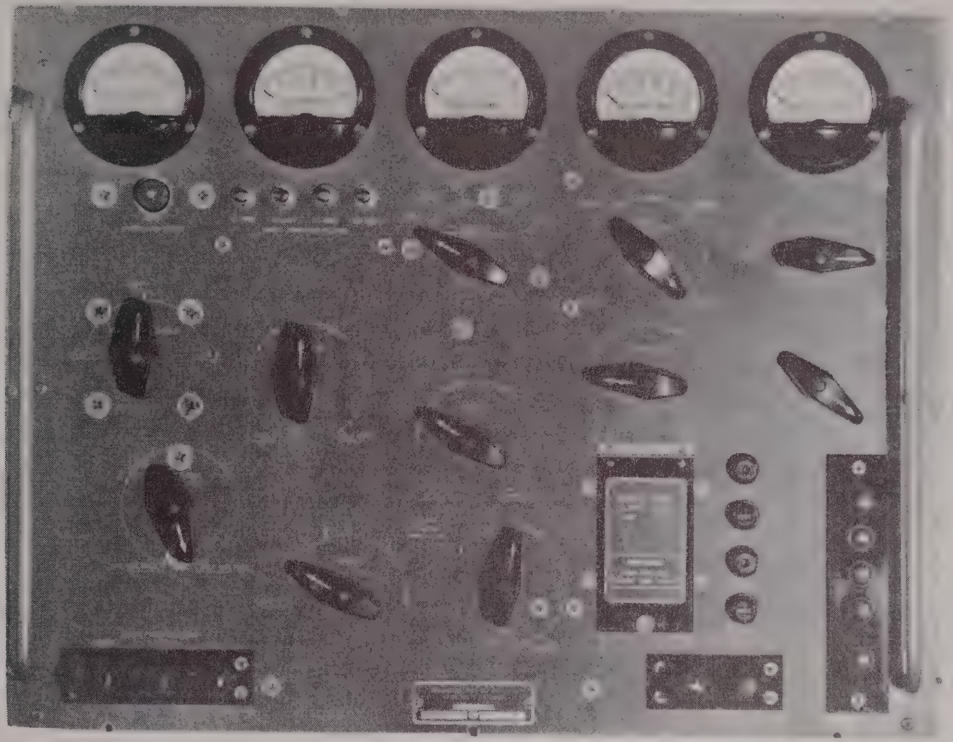
No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Voltage Comparator Sperry Part No. 1,000, 117	Metal	7CAC-210595	8-1/16	11-3/8	7-1/2	12.5
1	Cable Assy.						

DYNAMOTOR TEST SET TS-414/U
(TEST SET, ELECTRICAL POWER TS-414/U)

and monitored by the Wright Air Development Center, ARDC - Carl L.
Frederick and Associates, Bethesda, Maryland - Multilithed in U.S.A.



UNCTIONAL DESCRIPTION:

A portable, self-contained, universal dynamotor test set for maintenance use. he unit provides facilities for the measurement of input voltage and current, out-ut voltage and current, and the output ripple of single or multiple output dynamotor nits. Means are provided for adjustment of the input voltage to a precise value and or measuring both input voltage and current. Four output load circuits are provided, uitable for voltages up to 2500 volts DC. Meters for reading output voltage, load urrent and ripple voltage may be connected to any of the four loads by means of a witch. All loads are provided with panel adjustments to obtain exact load current alues.

ELATIONSHIP TO OTHER EQUIPMENT:

LECTROMECHANICAL DESCRIPTION:

ower Supply: No power is required for the operation of the test set other than that required to operate the dynamotor under test.

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.	Standard		Not Classified
STOCK NOS.	7CAC-801318-567		3F4325-414
PROCUREM'T INFO.: USAF Spec. No. 7148.			
PROCUREM'T COG.: USAF		DESIGN COG.: USAF, C&N	
F.I.I.N.:		FUNCTIONAL CLASS: 10.2.3	

DYNAMOTOR TEST SET TS-414/U
(TEST SET, ELECTRICAL POWER TS-414/U)

ELECTROMECHANICAL DESCRIPTION: (Continued)

Dynamotor Input:
Voltage: 14 or 28 volts (nominal), direct voltage supply (indicated and controlled from panel).
Current: 50 amperes, direct current (indicated and controlled from panel).
Power: At 14 volts, 700 watts maximum.
At 28 volts, 1400 watts maximum.
Both continuously variable.

Dynamotor Output Loads (controlled and indicated from panel):
Load No. 1: 2500 volts at 500 milliamperes maximum.
Load No. 2: 500 volts at 500 milliamperes maximum.
Load No. 3: 25 volts at 5 amperes maximum.
Load No. 4: -250 volts at 25 milliamperes maximum.

Temperature Range: -40° C. to +55° C.

MANUFACTURERS' OR CONTRACTORS' DATA:

Hudson-American Company, 25 West 43rd Street, New York, New York; Contract No. 33042-SC-2687; Order No. 4081-DAY-45CE.

Electronic Measurements Corporation, Red Bank, New Jersey; Contract No. W33-038-ac-18093; Approximate Cost per Equipment, $443.00.

Mercury Electric Corporation, 719 Wyandotte Street, Kansas City, Missouri; Contract No. AF33-038-3169, April 1949, Approximate Cost per Equipment, $416.00; Contract No. AF33-038-13036, June 1950, Approximate Cost per Equipment, $446.00; Order No. 50-4412, 6/5/50, Approximate Cost per Equipment, $447.00.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 16-35TS414-2 (Operating Instructions).
TO 16-35TS414-3 (Maintenance Instructions).
TO 16-35TS414-4 (Parts Catalog).
TO 16-55-422 (Spare Parts List).

SHIPPING DATA:

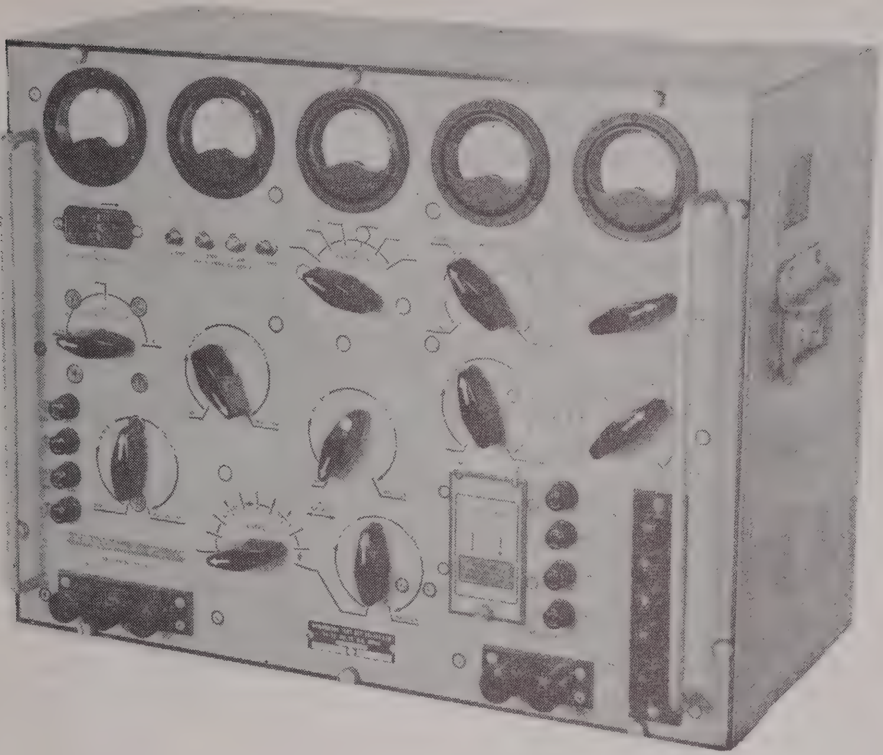
No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Over-all Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
1	Dynamotor Test Set TS-414/U, (Export packed).	9.90	25	31	22	130

DYNAMOTOR TEST SET TS-414/U
(TEST SET, ELECTRICAL POWER TS-414/U)

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Over-all Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Dynamotor Test Set, TS-414/U (Complete)		7CAC-801318-567 3F4325-414	18	23-1/2	14-1/4	63.0
1	Transit Case CY-692/U			21-3/16	23-9/16	16-3/4	30.0

DYNAMOTOR TEST SET TS-414A/U



This research was supported by the USAF under Contract AF 33(038)1289 and monitored by the Wright Air Development Center, ARDC - Carl L. Frederick and Associates, Bethesda, Maryland - Multilithed in U.S.A.

FUNCTIONAL DESCRIPTION:

A portable, general purpose, self-contained, dynamotor test set designed to provide facilities for the measurement of input voltage and current, output voltage and current, and the output ripple of single or multiple output dynamotor units. Means are provided for adjustment of the input voltage to a precise value. Five meters are calibrated in INPUT VOLTS DC, INPUT AMPERES DC, VOLTS RMS, DC OUTPUT CURRENT, AND OUTPUT VOLTS DC. Four output load circuits are provided with panel adjustments to obtain exact load current values.

RELATIONSHIP TO OTHER EQUIPMENT:

Similar to Dynamotor Test Set TS-414/U except that the "A" model contains JAN components and a magnetic circuit breaker instead of a thermal circuit breaker. Interchangeable as a whole but not as to components.

ELECTROMECHANICAL DESCRIPTION:

Power Supply: No power is required for the operation of the test set other than that required to operate the dynamotor under test.

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.	Standard		
STOCK NOS.			
PROCUREM'T INFO.: USAF Specs. 71-5056A & MIL-D-4629 dtd. 3-9-53.			
PROCUREM'T COG.: USAF		DESIGN COG.: USAF, C&N	
F.I.I.N.:		FUNCTIONAL CLASS: 10.2.3	

DYNAMOTOR TEST SET TS-414A/U

ELECTROMECHANICAL DESCRIPTION: (Continued)

Dynamotor Input:

Voltage: 14 or 28 direct voltage supply (indicated and controlled from panel).

Current: 0 to 50 amperes DC (indicated and controlled from panel).

Power: At 14 volts, 700 watts maximum; at 28 volts, 1400 watts maximum; both continuously variable.

Dynamotor Output Loads:

Load No. 1: 2500 volts at 0.5 ampere maximum (controlled and indicated from panel).

Load No. 2: 500 volts at 0.5 ampere maximum (controlled and indicated from panel).

Load No. 3: 25 volts at 5.0 amperes maximum (controlled and indicated from panel).

Load No. 4: -250 volts at 25 milliamperes maximum (controlled and indicated from panel).

Temperature Range: -40° C. to +55° C.

MANUFACTURERS' OR CONTRACTORS' DATA:

United Manufacturing Company, 3401 N. California Avenue, Chicago 18, Illinois; Contract No. AF 33(038)24487, dated 6-8-51 and AF 33(600)21376 dated 6-20-52; Approximate Cost per Unit, $600.00.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

SHIPPING DATA:

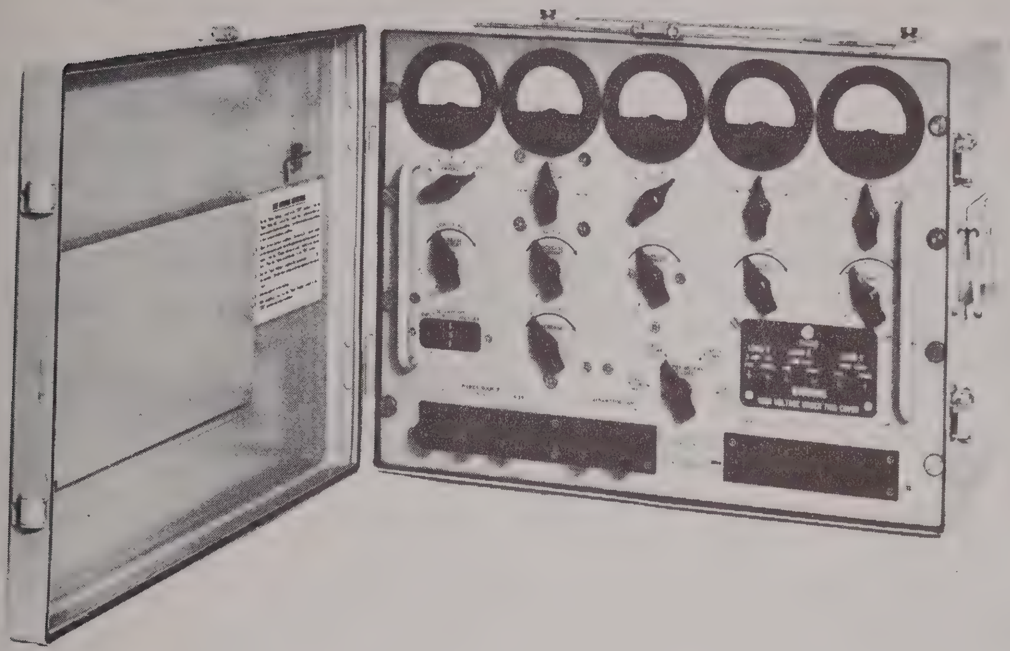
No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Over-all Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
1	Dynamotor Test Set TS-414A/U (Export Packed)	9.90	25	31	22	130

DYNAMOTOR TEST SET TS-414A/U

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Over-all Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Dynamotor Test Set TS-414A/U	Aluminum		18	23-1/2	12	65
1	Case CY-692/U			21-3/16	23-9/16	16-3/4	30

TEST SET, ELECTRICAL POWER TS-897/U



UNCTIONAL DESCRIPTION:

A portable, general purpose equipment used for testing dynamotor performance nder simulated load conditions. The test set provides means for controlling and easuring the voltage input to the dynamotor, provides a variable dynamotor load nd is capable of determining the efficiency and regulation under controlled load onditions. The equipment continuously indicates the dynamotor input voltage and urrent, output voltage and current and ripple voltage. Single- or multiple-output namotors may be tested.

ELATIONSHIP TO OTHER EQUIPMENT:

Replaces Dynamotor Test Set TS-414 ( )/U.

LECTROMECHANICAL DESCRIPTION:

ircuit Information: The proper input requirements for the dynamotor under test are selected by means of an output-voltage switch. A rheostat permits fine adjustment of the input voltage and a 50 amp fuse provides 25% overload protection for a period of approximately 15 seconds. An input-current switch is

(Continued)

	AIR FORCE	NAVY	ARMY
YPE CLASS.	Standard	Standard	
TOCK NOS.			

ROCUREM'T INFO.: Drawing Nos. C106, MIL-T-26247 and MIL-D-4629A

ROCUREM'T COG.: USAF DESIGN COG.: USAF

.I.I.N.: 6625-553-7691 FUNCTIONAL CLASS. NO.: 10. 2. 3

TEST SET, ELECTRICAL POWER TS-897/U

ELECTROMECHANICAL DESCRIPTION: (Continued):

used to select the desired meter current range and is spring-loaded in the 100 amp position as a safety measure. The load circuit consists of a fixed resistor, a variable resistor, and an ammeter in series between the load and the ground terminals. A four-position selector switch connects the proper meters into the selected load circuits. When the position of the switch is changed a surge-protection circuit prevents excessive currents from damaging the meters. All simulated loads are purely resistive and are convection cooled.

Power Supply: 12 to 14 and 12 to 28 volts, DC, 50 amps, maximum.

Simulated Loads (Maximum Values):
- Load 1: 750 watts at 1500 volts and 0.5 amp, DC.
- Load 2: 250 watts at 500 volts and 0.5 amp, DC.
- Load 3: 125 watts at 25 volts and 5.0 amps, DC.
- Load 4: 6.25 watts at 250 volts and 0.025 amp, DC.

Meter Calibration:
- Direct Current Input: 0 to 5, 0 to 10 and 0 to 25 amps.
- Direct Voltage Input: 0 to 30 volts.
- Direct Current Output: 0 to 25, 100 and 500 milliamps.
- Direct Voltage Output: 0 to 25, 0 to 500, 0 to 1500 volts.
- Ripple Voltage: 0 to 2.5, 0 to 10, 0 to 100 volts, AC.
- Accuracy: ±3% DC, ±4% AC.

MANUFACTURERS' OR CONTRACTORS' DATA:

Insuline Corporation of America, 186 Granite Street, Manchester, New Hampshire; Contract No. AF 33(604)-14074.

TUBE COMPLEMENT:

REFERENCE DATA AND LITERATURE:

TO 33A1-12-119-1 (Handbook of Operation and Service Instructions).

SHIPPING DATA:

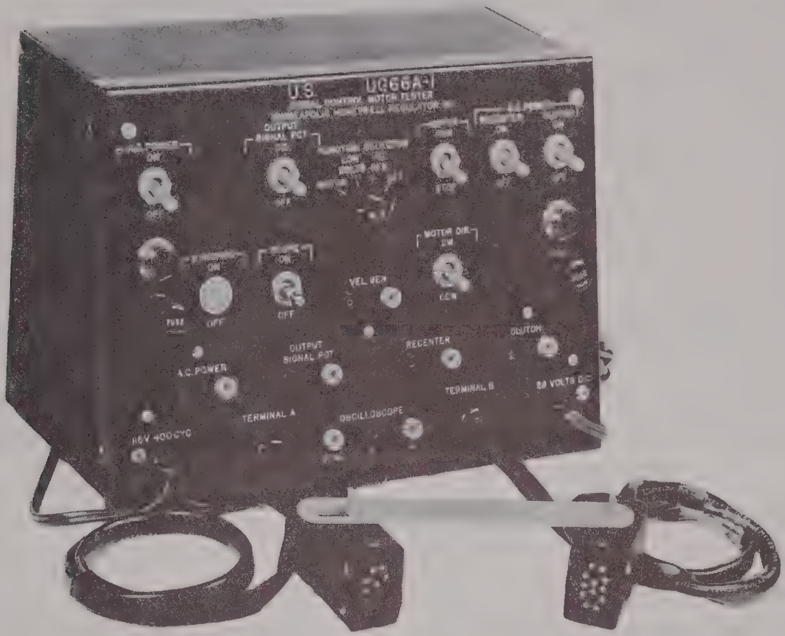
No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
	Test Set, Electrical Power TS-897/U					

TEST SET,ELECTRICAL POWER TS-897/U

QUIPMENT SUPPLIED:

uant. Per q'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Test Set, Electrical Power TS-897/U	Aluminum		15-3/4	20-1/2	12-3/4	60

TESTER-ELECTRICAL SIGNAL MOTOR
Part No. UG66A-1
(Minneapolis-Honeywell Regulator Company)



FUNCTIONAL DESCRIPTION:

A portable instrument which is used in testing and adjusting the motor and veloc-ty generator of the signal control motor used in the RG7042A Directional Coupler Amplifier. Test facilities provided are for motor speed check, motor low voltage check, velocity generator dynamic and static output, and potentiometer recentering.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: Connections are made between the tester, the power supplies, and the unit under test by means of cables, receptacles, and polarized plugs. An auxiliary variable transformer is used to regulate the input voltage. Resistors, capacitors, a transformer, and switches in the tester circuit direct and control the flow of current through the unit under test. A rotary-type function selector switch controls the portion of the secondary winding of the transformer which supplies voltage to the motor winding of the signal control motor. By the use of a volt-ohm-milliammeter, a vacuum tube voltmeter, and an oscilloscope, the operational qualities of the signal motor are determined.

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-809662		
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.2.3	
	- Electronics Test Equipment - M.-Honeywell UG66A-1		

is project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U.S.A.

TESTER - SIGNAL MOTOR ELECTRICAL
Part No. UG 66A-1
(Minneapolis-Honeywell Regulator Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)

Output Voltage Ranges:

Function Selector Switch in "Motor" Position: 105 ± 5 volts, AC, between pin and 9 of connector.

Function Selector Switch in "Low Volts" Position: 8 ± 1 volt, AC, between pin 7 and 9 of connector.

Function Selector Switch in "Velocity Generator" Position: 45 ± 3 volts, AC between pins 7 and 9 of connector.

Output Signal Potentiometer Switch in "ON" Position: 30 ± 2 volts, AC, betwee pins 5 and 6 of connector.

Clutch and Recenter Switch in "ON" Position: 28 ± 2 volts, DC, between pins and 11, 1 and 11, and 2 and 3.

Output Impedance: 1000 ohms ±6% at velocity generator tip jacks.

Power Supply: 115 volts, AC, 400 cycles per second, ±10%.
28 volts, DC, ±4 volts.

Power Consumption: 50 watts (maximum), AC.
10 watts (maximum), DC.

MANUFACTURERS' OR CONTRACTORS' DATA:

Minneapolis-Honeywell Regulator Company, 2753 Fourth Avenue, Minneapolis 8 Minnesota; Contract No. AF 33(600)19245-2.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 33D3-4-22-1 (Instructions and Parts Breakdown).

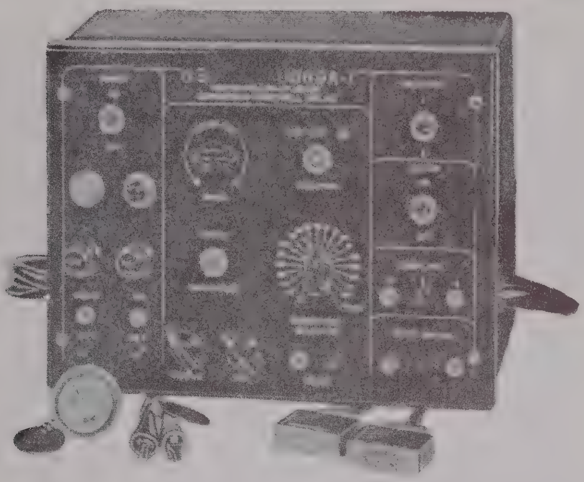
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weigh Packe (Lbs.
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weigh (Lbs.)
				H	W	D	
1	Tester- Signal Motor Electrical (Minneapolis-Honeywell Part No. UG 66A-1)	Metal	7CAC-809662	7-3/4	5-1/2	10	5

TESTER, FOLLOWUP MOTOR, ELECTRICAL
Part No. UG 89A-1
(Minneapolis-Honeywell Regulator Company)



FUNCTIONAL DESCRIPTION:

A portable unit which is used at overhaul and maintenance depots to electrically test the 421778 and 432868 Followup Motors used in PG 7030B1 and B2 Altitude Controls, respectively. The following tests are performed: (1) the followup motor may be driven in either direction, (2) both the static and the dynamic voltages of the velocity generator may be measured, (3) the dynamic zero signal (quadrature) may be measured, (4) the solenoid clutch operation may be tested, and (5) the continuity of the displacement potentiometer may be checked.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: A polarized plug is provided for energizing the tester with the AC power, while the DC power is introduced through clips. A selector switch alters the tester circuitry to accommodate different models of the followup. A "Direction" switch controls the direction of motor shaft rotation; velocity of shaft rotation is adjusted by the "Speed" knob. "Meter" jacks on the front panel of the tester provide a means of connecting an auxiliary voltmeter during the tests. A control marked "Resistance Selector" controls the dynamic zero signal which is read across the meter jacks. Potentiometer continuity and reset switch action

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-806220		
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.2.3	
	- Electronics Test Equipment - M. Honeywell UG 89A-1		

is project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

TESTER, FOLLOWUP MOTOR, ELECTRICAL
Part No. UG 89A-1
(Minneapolis-Honeywell Regulator Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)
are also checked across these jacks.
Power Supply: 115 volts, AC, 400 cycles per second, single phase; 28 volts, DC.

MANUFACTURERS' OR CONTRACTORS' DATA:
Minneapolis-Honeywell Regulator Company, Aeronautical Division, 2600 Ridway Road, Minneapolis 13, Minnesota; Contract No. AF 33(600)22794.

TUBE COMPLEMENT:
None.

REFERENCE DATA AND LITERATURE:
Minneapolis-Honeywell Engineering Specification, No. 4231A.

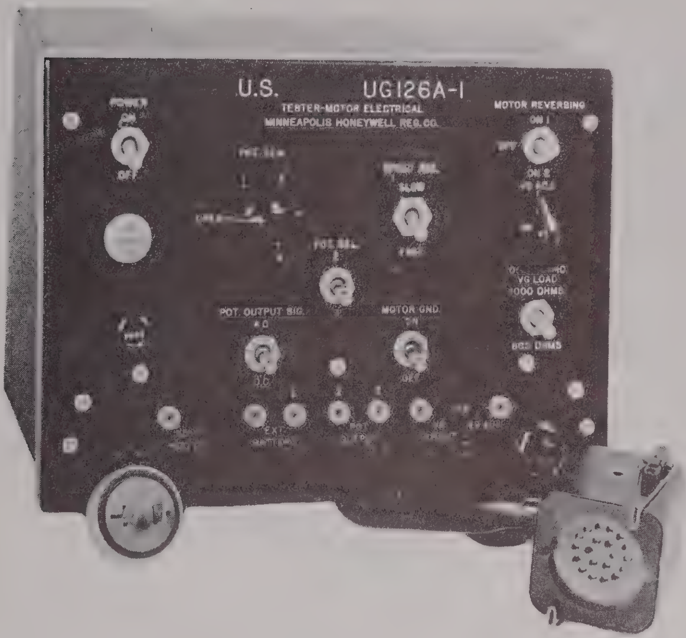
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Tester, Follow-up Motor, Electrical (Minneapolis Honeywell UG 89A-1)		7CAC-806220	7	10	5-1/2	5-1/2

TESTER-MOTOR, ELECTRICAL
Part No. UG 126 A-1
(Minneapolis-Honeywell Regulator Company)



FUNCTIONAL DESCRIPTION:

A portable device used at depot-level maintenance and overhaul for operating and making electrical tests on the DG 1A, B, C, D, and E Signal Controls of the localizer and glide slope couplers. These couplers are components of the E-11 Autopilot. The tester facilitates the checking of the signal potentiometers, the output of the velocity generator, and provides a timing circuit for measuring travel time of the potentiometer wipers in the signal control.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The tester circuitry consists of a power transformer, potentiometers, resistors, capacitors, pin terminal jacks, and panel-mounted switches. Electrical connections with the unit under test are made by means of cables and receptacles which are permanently attached to the tester. Potentiometer tests consist of various processes of moving the potentiometer wipers to desired positions by means of switching arrangements and measuring the voltage at the speci-

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-805555		
PROCUREM'T INFO.: USAF Drawing AD 5078M			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.:	10.2.3
		- Electronics Test Equipment - M. Honeywell UG 126A-1	

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U.S.A.

TESTER-MOTOR, ELECTRICAL
Part No. UG 126 A-1
(Minneapolis - Honeywell Regulator Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)

fied pin terminal jacks using a voltmeter. To measure the velocity generator output, the velocity generator load switch is positioned as required for the unit under test. Indications are read on an AC millivoltmeter connected to the pin terminal jacks marked "VG Output." To measure travel time of potentiometer wiper, a DC voltage is applied across the potentiometer and the motor overrun until the wiper stops. A recorder is attached to the "Pot Output" pin terminal jacks and the motor is reversed, running the wiper to the opposite stop. Travel time will be indicated on the recorder.

Power Supply: 115 volts, AC, 400 cycles per second ± 10%.
7 volts, ± 2 volts, DC.

MANUFACTURERS' OR CONTRACTORS' DATA:

Minneapolis-Honeywell Regulator Company, 2753 Fourth Avenue, Minneapolis 8, Minnesota; Contract No. AF 33(600)22794.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

Minneapolis-Honeywell data sheet.

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Tester-Motor, Electrical (Minneapolis-Honeywell UG 126A-1)	Alum.	7CAC-805555	7-3/4	10-1/2	6	5-3/4

FIXTURE, RUN-IN SIGNAL CONTROL MOTOR
Part No. UG 147A-1
(Minneapolis-Honeywell Regulator Company)

FUNCTIONAL DESCRIPTION:

A portable unit which is used to run in one, two, or three signal control motors. Special connectors provide a means of attaching the fixture to the units under test. The signal control motor is a component of the E-11 Autopilot.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: Connections are made with the unit under test through the use of electrical cables ending in special socket-type connector assemblies. Operating current is supplied through a conventional electrical cable and polarized plug. Selection of the circuit to be used is made by positioning any or all of the three-way toggle switches on the front panel of the fixture. Motor line readings are made by attaching a vacuum tube voltmeter to the tip jacks on the front panel.

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAD-293350		
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.:	10.2.3
	- Electronics Test Equipment -M. Honeywell UG 147A-1		

is project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

FIXTURE, RUN-IN SIGNAL CONTROL MOTOR
Part No. UG 147A-1
(Minneapolis-Honeywell Regulator Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)

Power Supply: 115 volts, AC, 400 cycles per second, single phase.

MANUFACTURERS' OR CONTRACTORS' DATA:

Minneapolis-Honeywell Regulator Company, Aeronautical Division, 2600 Ridway Road, Minneapolis 13, Minnesota; Contract No. AF 33(600)19245.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 33D3-4-24-1 (Instructions and Parts Breakdown).

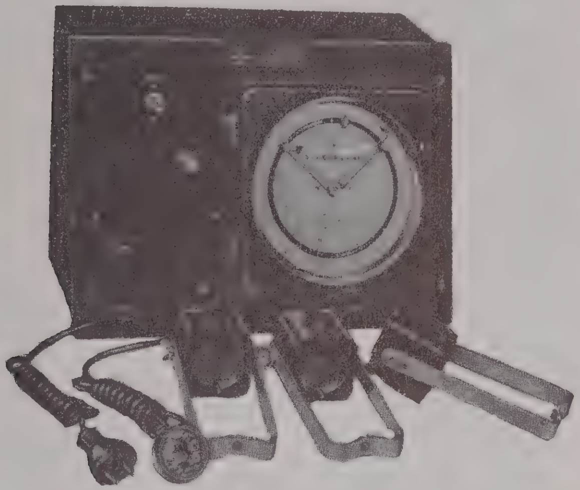
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Fixture, Run-In Signal Control Motor (Minneapolis-Honeywell UG 147A-1)	Aluminum	7CAD-293350	5-1/2	7-1/4	4-1/2	3-3/4

FIXTURE, RUN-IN, CONTROL MOTOR
Part No. UG190A-1
(Minneapolis-Honeywell Regulator Company)



FUNCTIONAL DESCRIPTION:

This is a special purpose overhaul device used to run in simultaneously one, two, or three DG1A, B, C, D, or E Signal Control Motors. The fixture has an adjustable timing device to reverse the direction of the motors automatically and to cause them to run continuously during the interval between reversals.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: An adjustable timer automatically reverses the secondary leads from the built-in transformer thereby effecting reversal of the motors under test. The timer mechanism has two timer adjustment arms which can be set to the desired stop-to-stop time required by the units being run in. Electrical switching occurs at zero time. The motors are connected to the fixture through connectors each having a holding strap. A toggle switch is used for turning the fixture power on and off. A neon pilot light is included on the panel to indicate that the fixture is in operation.

Power Supply: 115 volt ±10+, AC, 60 cycles per second, single phase, 25 watts (timer motor).

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-293400		
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10. 2. 3	
	- Electronics Test Equipment -M. Honeywell UG190A-1		

s project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

FIXTURE, RUN-IN, CONTROL MOTOR
Part No. UG 190A-1
(Minneapolis-Honeywell Regulator Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)

115 volt ± 10%, AC, 400 cycles per second, single phase, 25 watts (transformer).

MANUFACTURERS' OR CONTRACTORS' DATA:

Minneapolis-Honeywell Regulator Company, 2753 Fourth Avenue, Minneapolis 8, Minnesota; Contract No. AF 33(600)22794.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 33D3-4-46-1 (Instructions and Parts Breakdown).

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Fixture, Run-in Control Motor (Honeywell UG190A-1)		7CAC-293400	9-1/2	13	7-1/2	10

CONTROL PANEL, D.C. SERVO
Part No. T-101097
(Sperry Gyroscope Company)

UNCTIONAL DESCRIPTION:

A portable depot level tool designed for the bench testing of DC servo motors sed in the A-1A Computer. The control panel supplies the variable AC and DC oltages necessary in the testing and provides means of holding the motors for torque easurements.

ELATIONSHIP TO OTHER EQUIPMENT:

LECTROMECHANICAL DESCRIPTION:

ircuit Information: The circuit contains two variable transformers. One is used to adjust the line voltage output to the desired level. The other one is used to vary the voltage applied to the primary of a stepdown transformer. The secondary of this transformer leads to two selenium rectifiers which provide DC voltage for test purposes. The following meters are located on the test panel: Field current meter, field voltage meter, armature voltage meter, high voltage DC meter (indicates rectified output of stepdown transformer in motor field circuit), 400-cycle meter (indicates output of line variable transformer), armature current meter (indicates output of line variable transformer), armature current meter.

Also on the panel are switches and controls which permit the following test functions to be performed:

(Continued)

	AIR FORCE	NAVY	ARMY
YPE CLASS.			
TOCK NOS.	7CAC-618503-28		

ROCUREM'T INFO.:
ROCUREM'T COG.: DESIGN COG.: Commercial
.I.I.N.: FUNCTIONAL CLASS. NO.: 10.2.3
- Electronics Test Equipment - Sperry T-101097

project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U.S.A.

CONTROL PANEL, D. C. SERVO
Part No. T-101097
(Sperry Gyroscope Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)

(1) Reversing the polarity of the motor armature voltage.
(2) Varying the DC input voltage of the motor armature.
(3) Reducing the output voltage of the motor armature.
(4) Varying the resistance in the motor armature circuit.
(5) Selecting any desired motor field.
(6) Selecting either a high or a low motor field voltage.
(7) Reversing the rotation of the motor.
(8) Reversing the polarity and varying the output voltage of the tachometer under test.

Each meter on the panel has a corresponding check jack which permits checking the meter accuracy by means of an external auxiliary meter. Output meter jacks are also provided to permit measuring the output voltage of the tachometer under test by means of an external auxiliary meter. Panel lamps indicate the presence of power at either of the variable transformers or the armature adjust control potentiometer. One spring scale with associated pulleys is also included to provide means for motor torque measurements.

Power Supply: 115 volts, 400 cycles per second, AC, single-phase; and 27 volts, DC.

MANUFACTURERS' OR CONTRACTORS' DATA:

Sperry Gyroscope Company, Division of the Sperry-Rand Corporation, Great Neck, Long Island, New York; Contract AF 33(600)6565.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 33D5-5-58-1 (Operation and Service Instructions).
TO 33D5-5-58-4 (Illustrated Parts Breakdown).

SHIPPING DATA:

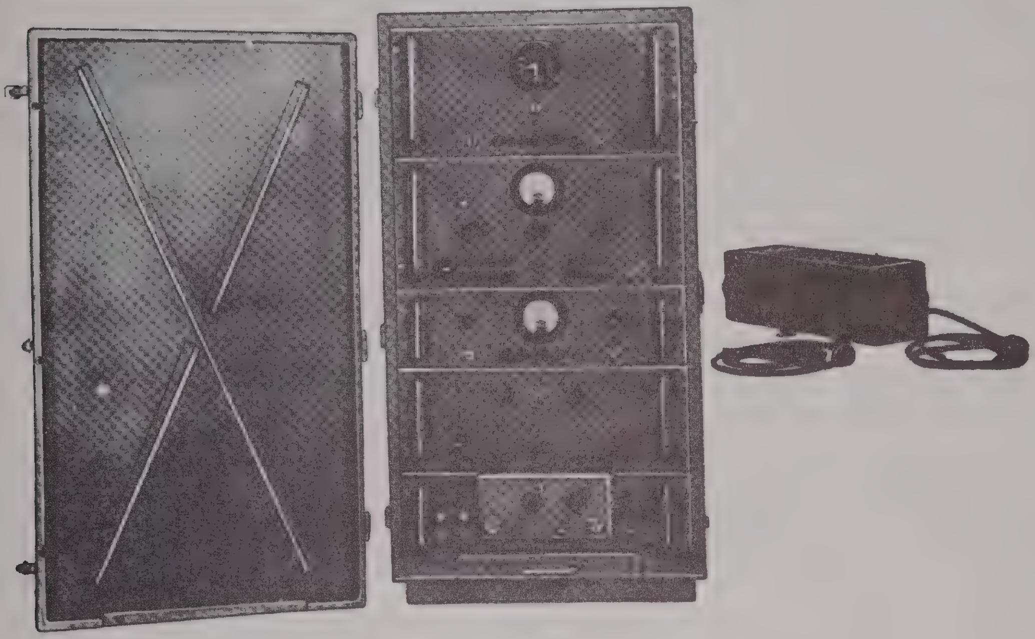
No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

CONTROL PANEL, D. C. SERVO
Part No. T-101097
(Sperry Gyroscope Company)

QUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Control Panel, D. C. Servo (Sperry T-101097)		7CAC-618503-28	19-1/4	21-3/8	15	50

COMMUTATOR TEST SET AN/GPM-6



UNCTIONAL DESCRIPTION:

A special purpose test set used for depot testing Western Electric Company apacitor Commutators D-153003 used in wind servo units, and D-153361 used in ate servo units. The wind and rate servo units are both components of Ground osition Indicator AN/APA-44. This test set provides complete test facilities for hecking electrical performance of both commutators, and determines the required alues of trimmer resistors necessary for use on the D-153361 commutator.

ELATIONSHIP TO OTHER EQUIPMENT:

LECTROMECHANICAL DESCRIPTION:

ircuit Information: The circuitry consists of the components necessary to establish operating conditions for test commutators and standard commutators and to compare their performances electrically. To accomplish this, synchronous motors drive the commutators from closely regulated AC power. Two DC amplifier circuits, with feedback resistors, develop test voltages. Two switch control circuits provide various test interconnections. Fixed and variable voltage

(Continued)

	AIR FORCE	NAVY	ARMY
YPE CLASS.	Alternate Standard		
TOCK NOS.	7CAC-801318-5425		

ROCUREM'T INFO.:

ROCUREM'T COG.: USAF DESIGN COG.: USAF, Arm.

.I.I.N.: FUNCTIONAL CLASS. NO.: 10.2.5

- Electronics Test Equipment - AN/GPM-6

project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

COMMUTATOR TEST SET AN/GPM-6

ELECTROMECHANICAL DESCRIPTION:

divider networks provide operating voltages. A null-detector circuit provides a means of comparing slight differences in voltage, and of arriving at a precise balance. It consists of a two-stage differential DC amplifier and a zero-center microammeter.

Power Supply: 115 volts ±10%, AC, 60 cycles per second, single phase, 285 watts.
Rotation Speed of Commutator Drive: 30 revolutions per second.
Ambient Temperature Limits: +15.5°C. (60°F.) to +28.5°C. (85°F.).
Maximum Relative Humidity: 60%.

MANUFACTURERS' OR CONTRACTORS' DATA:

Western Electric Company, 120 Broadway, New York, New York; USAF Contract No. AF 33(038)-7414; Western Electric Specification GS-15323; Drawing Index No. BB-745277; Approximate Cost per Unit, $18,000.00.

TUBE COMPLEMENT:

6 JAN-6SU7GTY, 1 JAN-6SN7GT, 3 JAN-6AK5, 2 JAN-6AC7, 6 JAN-6AR6, 1 JAN-6X5, 1 JAN-5651, 2 JAN-5U4G, 2 JAN-6AU6, 3 JAN-2D21.

REFERENCE DATA AND LITERATURE:

TO 33D5-12-4-1 (Operation and Maintenance Instructions).

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Commutator Test Set AN/GPM-6 (GS-15323)	Steel	7CAC-801318-5425	20-3/4	19-1/2	39-1/2	302
	Including:						
1	Standard Commutator Test Set GS-15044			20-3/4	19-1/2	39-1/2	263

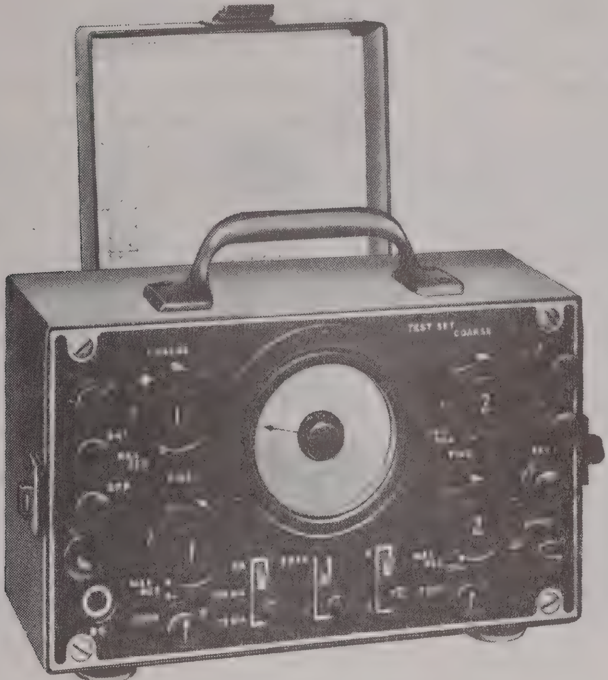
(Continued)

COMMUTATOR TEST SET AN/GPM-6

QUIPMENT SUPPLIED: (Continued)

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Over-all Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Test Panel GS-15104			19	5-1/4	10-3/4	17
1	Control Panel GS-15103			19	8-3/4	15-1/2	33
1	DC Null Detector Panel GS-15102			19	5-1/4	8-1/2	13
1	Power Supply Panel GS-15031			19	8-3/4	15-1/2	60
1	Audio Frequency Oscillator Panel GS-15032			19	8-3/4	10-1/2	33
1	Cable BO-717027			32 long			0. 37
8	Test Cable BO-711657			13 long			0. 4
1	Cable BO-717027-2			37 long			0. 37
1	Cable BO-717027-3			52 long			0. 5
1	Cable BO-720851			60 long			0. 75
1	Cable BO-717026			19 long			0. 63
1	Cable BO-717025			25 long			0. 63
1	Cable BO-717024			47 long			0. 05
1	Cabinet BX-711981			20-3/4	19-1/2	39-1/2	101
1	Constant Voltage Regulator SOLA Nr. 30808			14-1/2	5-5/8	6-15/16	39

TEST SET I-181-B
(TEST SET, RELAY, I-181-B)



UNCTIONAL DESCRIPTION:

A portable, general purpose, current flow type relay adjusting set whose pri-ary function is to measure and control current flow through the windings of a relay, r similar electromagnetic unit. The set will also operate as a DC milliammeter. is especially suited for use with small installations of communication equipment ecause of its size and ease of operation. Indication is provided on a sealed milli-mmeter.

ELATIONSHIP TO OTHER EQUIPMENT:

Test Set I-181-B is essentially the same as other I-181 models except that a mall terminal board has been added for mounting resistors and capacitors.

LECTROMECHANICAL DESCRIPTION:

ircuit Information: There are three circuits, two of which are fused, and connected

(Continued)

	AIR FORCE	NAVY	ARMY
YPE CLASS.			
TOCK NOS.	1600-327844200	F16-Q-651000-200	3F4181
PROCUREM'T INFO.:	Spec. MIL-T-3101 dated 14 December 1949		
PROCUREM'T COG.:	Army	DESIGN COG.: Army, CSL	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.2.6	

project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U.S.A.

TEST SET I-181-B
(TEST SET, RELAY, I-181-B)

ELECTROMECHANICAL DESCRIPTION: (Continued)

through variable resistors to the indicating meter. One of these two circuits contains more resistance than the other and a locking key for continuous meter indication. The third circuit connects power directly through an unfused fixed resistance to the equipment under test. This arrangement makes it possible for this equipment to "soak" its circuits, when required, prior to testing with either of the other two circuits. When using the equipment as a milliammeter either of the variable resistive circuits can be used by removing all the variable resistances.

Power Supply: A battery is required of the type indicated in the testing instructions of the prime equipment. Generally this will be a 22.5-volt or 45-volt battery.

Current Ranges: 0 to 15 milliamperes, 0 to 75 milliamperes, 0 to 150 milliamperes.

Fuse Rating: 1/8 ampere, maximum.

Temperature Range: 0° C. to +40° C., operating; -65° C. to +85° C., storage (without battery).

Humidity Range: Up to 95%, relative.

MANUFACTURERS' OR CONTRACTORS' DATA:

Western Electric Company, New York, New York; Army Order Nos. 11787-PHILA-48, 20586-PHILA-49-7; Approximate Cost per Unit, $135.00.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 16-40I181-5 (TM 11-2036) (Instruction Book).

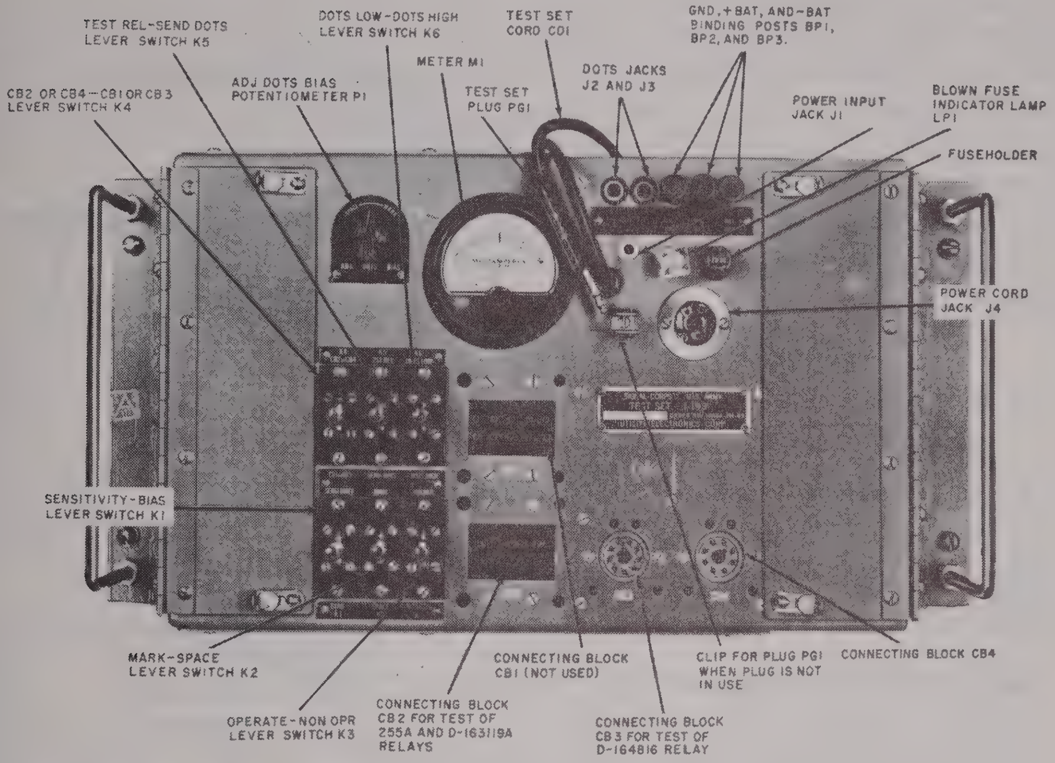
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
1	Test Set I-181-B	1.0				25.0

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Test Set I-181-B	Metal	1600-327844200 F16-Q-651000-200 3F4181	6-3/8	9-1/2	5-1/2	9

TEST SET I-193-C
(TEST SET, RELAY, I-193-C)


TEST REL-SEND DOTS LEVER SWITCH K5
DOTS LOW-DOTS HIGH LEVER SWITCH K6
TEST SET CORD CO1
GND, + BAT, AND - BAT BINDING POSTS BP1, BP2, AND BP3.
METER M1
DOTS JACKS J2 AND J3
CB2 OR CB4 — CB1 OR CB3 LEVER SWITCH K4
ADJ DOTS BIAS POTENTIOMETER P1
TEST SET PLUG PG1
POWER INPUT JACK J1
BLOWN FUSE INDICATOR LAMP LP1
FUSEHOLDER
POWER CORD JACK J4
SENSITIVITY-BIAS LEVER SWITCH K1
MARK-SPACE LEVER SWITCH K2
OPERATE-NON OPR LEVER SWITCH K3
CONNECTING BLOCK CB2 FOR TEST OF 255A AND D-163119A RELAYS
CONNECTING BLOCK CB1 (NOT USED)
CONNECTING BLOCK CB3 FOR TEST OF D-164816 RELAY
CLIP FOR PLUG PG1 WHEN PLUG IS NOT IN USE
CONNECTING BLOCK CB4

UNCTIONAL DESCRIPTION:

A portable, general purpose test instrument designed to test and adjust Type-255 larized relays used in telegraph equipment. The polar relays are tested for bias d for sensitivity of operate and non-operate current values. The electrical operat- characteristics of the relay under test are determined by deflections of the test eter needle. The meter is calibrated in milliamperes. In addition, the test set ntains a circuit that produces and sends a continuous series of impulses, called ts, for testing external telegraph circuits.

ELATIONSHIP TO OTHER EQUIPMENT:

Test Set I-193-C is identical to other I-193 models except for slight differences physical appearance.

LECTROMECHANICAL DESCRIPTION:

rcuit Information: The test set contains six basic circuits: an oscillating circuit

(Continued)

	AIR FORCE	NAVY	ARMY
YPE CLASS.			
TOCK NOS.			3F4193C

ROCUREM'T INFO.: Army Spec. 71-3348
ROCUREM'T COG.: Army DESIGN COG.: Army, CSL
.I.I.N.: FUNCTIONAL CLASS. NO.: 10.2.6

- Electronics Test Equipment - I-193-C

roject was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U.S.A.

TEST SET I-193-C
(TEST SET, RELAY, I-193-C)

ELECTROMECHANICAL DESCRIPTION: (Continued)

which produces an alternating current, a dots producing and sending circuit, a metering circuit, a soak current circuit used when testing sensitivity, and the operate and non-operate circuits which apply current in both the marking and spacing directions to a relay under test.

Power Supply: 115 to 130 volts, DC, at 10 watts.

Output Frequency: 10 to 20 cycles per second, AC.

Meter Scale: 0 to 100 milliamperes, DC, each side in steps of 5 milliamperes.

MANUFACTURERS' OR CONTRACTORS' DATA:

Utility Electronics Corporation, Newark 4, New Jersey; SigC Order No. 18684-Phila-49.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 16-40-I193-5 (TM 11-2513) (Instruction Book).

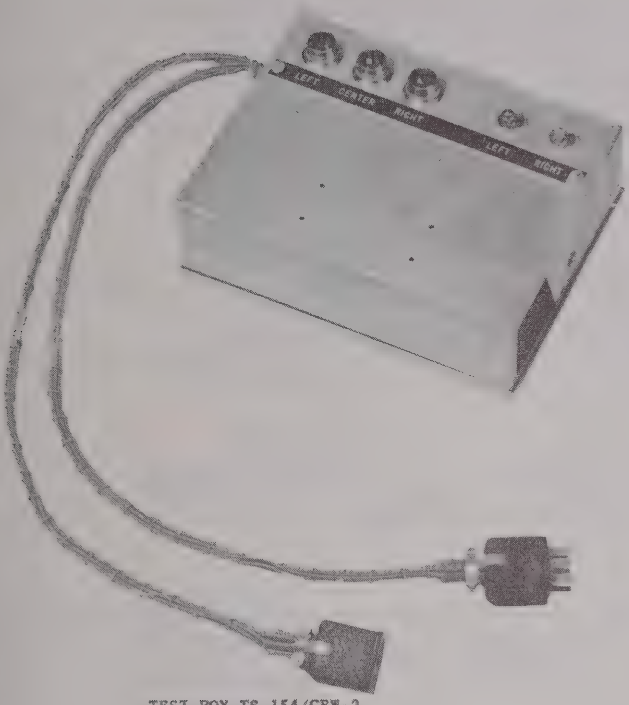
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
1	Test Set I-193-C (Export Packed)	4.2	15	30	16	135

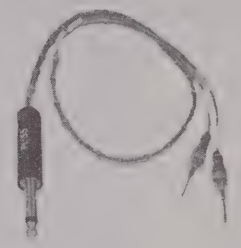
EQUIPMENT SUPPLIED:

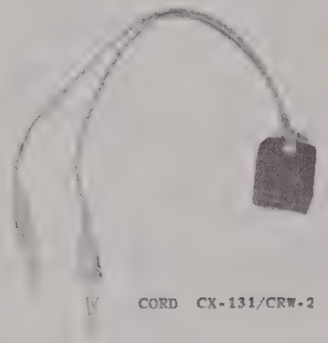
Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Test Set I-193-C		3F4193C	11-3/4	23	12-3/4	63
1	Carrying Case	Plywood					
1	Tool Kit						
1	Case containing spare fuses and lamps						
1	Instruction Book						

TEST BOX TS-154/CRW-2
(TEST SET, RELAY, TS-154/CRW-2)


TEST BOX TS-154/CRW-2

CORD CX-130/CRW-2




CORD CX-131/CRW-2

UNCTIONAL DESCRIPTION:

A special purpose test box designed to test the functioning of relays in Radio Re- iving Sets AN/CRW-2 and AN/ARW-10, and to test the operation of the parent uipment. It functions primarily as an indicator of the receiving equipment per- rmance. Three pilot lights and two toggle switches mounted on the operating panel ovide controls and indicators for the test unit. The pilot lights are labeled "Left", enter" and "Right."

ELATIONSHIP TO OTHER EQUIPMENT:

LECTROMECHANICAL DESCRIPTION:

rcuit Information: When the test box is properly connected to the Receiving Equipment AN/CRW-2, the indicator lamps on the test box are energized by the receiver under test through the receiver relays. When the power is applied to the receiver, the "Center" lamp should light. When a left control signal is sent from the transmitting equipment, the "Left" lamp should light ("Center" lamp out) and

(Continued)

	AIR FORCE	NAVY	ARMY
YPE CLASS.	Limited Standard		
TOCK NOS.	7CAC-801319-38		3F4325-154

ROCUREM'T INFO.: USAF Spec. No. ES-C-51900

ROCUREM'T COG.: USAF DESIGN COG.: USAF, ARL

.I.I.N.: FUNCTIONAL CLASS. NO.: 10.2.6

roject was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U.S.A.

TEST BOX TS-154/CRW-2
(TEST SET, RELAY, TS-154/CRW-2)

ELECTROMECHANICAL DESCRIPTION: (Continued)

similarly, the "Right" lamp should light ("Center" lamp goes out) when a rig control signal is sent from the transmitting equipment. This indicates prop functioning of the receiver relays.

The toggle switches are provided to test the operation of the parent equipme only. Switch manipulation should result in proper indications from the pare equipment.

Power Supply: None required.

MANUFACTURERS' OR CONTRACTORS' DATA:

W. W. Boes, Dayton, Ohio; Order No. 1319-44, 15 June 1944; Approximate Co per Unit, $18.37.

Dayton Acme Company, 928 York Street, Cincinnati, Ohio; Order No. 392-45-SI 6 September 1944; Approximate Cost per Unit, $18.92.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 16-35TS154-2 (Maintenance Instructions).

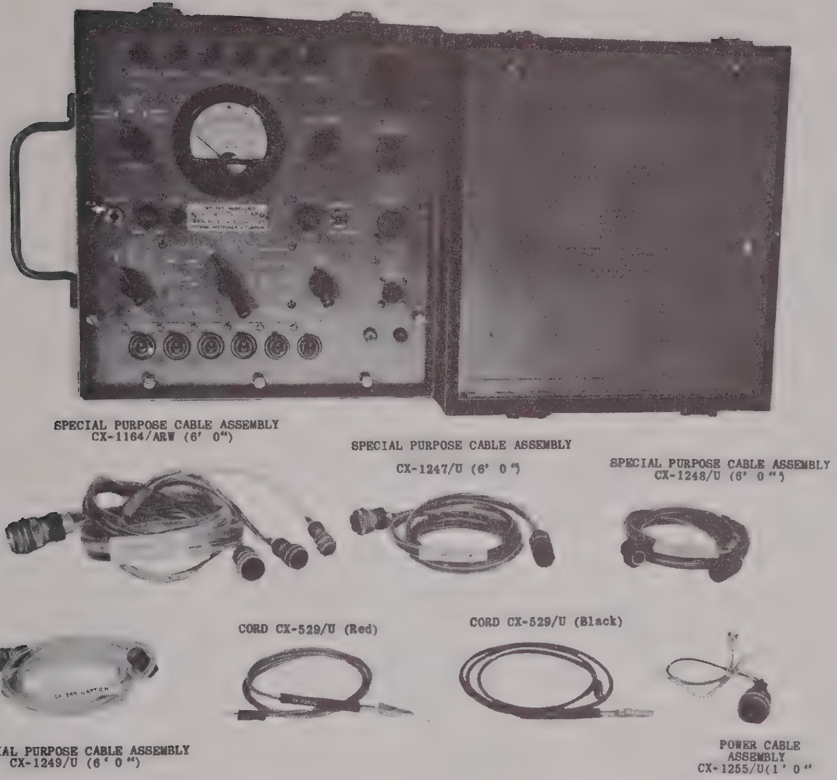
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weigh Packe (Lbs.
			H	W	D	
1	Test Box TS-154/CRW-2 with accessories (Shelf Package, Water-Resistant Carton)	0.08	8	6	3	3

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weigh (Lbs.
				H	W	D	
1	Test Box TS-154/CRW-2	Steel	7CAC-801319-38 3F4325-154	6-1/2	5	2-7/8	2.13
1	Cord CX-130/CRW-2		3E6000-130	18 long			0.125
1	Cord CX-131/CRW-2		3E6000-131	6 long			0.125
3	Lamp AN3126-313		8800-465850 2Z5938	3-1/4 long			

TEST SET TS-257/ARW


SPECIAL PURPOSE CABLE ASSEMBLY
CX-1164/ARW (6' 0")
SPECIAL PURPOSE CABLE ASSEMBLY
CX-1247/U (6' 0")
SPECIAL PURPOSE CABLE ASSEMBLY
CX-1248/U (6' 0")
CORD CX-529/U (Red)
CORD CX-529/U (Black)
SPECIAL PURPOSE CABLE ASSEMBLY
CX-1249/U (6' 0")
POWER CABLE
ASSEMBLY
CX-1255/U(1' 0"

UNCTIONAL DESCRIPTION:

A portable, self-contained instrument used for measuring voltages, currents,
d resistance, and to provide lamp indicator and auxiliary control circuits neces-
ry for pre-flight or bench tests of Radio Receiving Sets AN/ARW-26, AN/ARW-
AY, AN/ARW-26Y, and their associated servomechanisms. In addition, the
odulated radio frequency output of the transmitters for the above receivers can be
tected and tested. Circuits are provided, independent of other functions, for
easuring external DC voltages and external resistance.

ELATIONSHIP TO OTHER EQUIPMENT:

Used with AN/ARW-26, -26AY, -26Y, and RC-57B.

LECTROMECHANICAL DESCRIPTION:

rcuit Information: The test set consists essentially of three separate circuits. A
multiscale meter, with its associated shunts and multipliers, provides a means
of measuring various voltages and currents present in the receiver under test.
An internal six-volt battery and a group of six light indicators provide a means

(Continued)

	AIR FORCE	NAVY	ARMY
YPE CLASS.	Limited Standard		
OCK NOS.	7CAC-801319-2574	ASO-R16-AN-TS-257-ARW	3F4325-257
ROCUREM'T INFO.: USAF, MCREE-545 MIL-T-4373			
ROCUREM'T COG.:	USAF	DESIGN COG.: USAF, ARL	
.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.2.6	
	- Electronics Test Equipment -		TS-257/ARW

roject was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U.S.A.

TEST SET TS-257/ARW

ELECTROMECHANICAL DESCRIPTION: (Continued)

of checking the closing of relays in the receiver. Momentary contact switches provide a means of locally operating the servo motors.

Power Supply: 1.5 volts, DC, and 6.0 volts, DC, supplied by one 1.5 volt Battery BA-35 and one 6.0 volt Battery BA-210/U.

Internal Connection:

Voltage Range: 0 to 5, 10, 50, 100, and 300 volts, DC.

Current Range: 0 to 15 and 30 milliamperes, DC.

Resistance Range: 0 to 50,000 ohms.

RF Voltage: (30% modulated) 0 to 0.4 volts (not calibrated).

Sensitivity: 5000 ohms per volt.

Basic Meter Movement: 0 to 200 microamperes ±1%, 750 ohms internal resistance.

External Connection:

Voltage Range: 0 to 10 and 300 volts, DC.

Resistance Range: 0 to 50,000 ohms.

Accuracy: ±4% of full scale.

MANUFACTURERS' OR CONTRACTORS' DATA:

Setchell-Carlson, 2233 University Avenue, St. Paul, Minnesota; Contract No. 3001-45RC; 2 February 1945; Approximate Cost per Equipment, $150.00.

Technicontrol Engineering Company, Inc., 3212 Market Street, Philadelphia 4, Pennsylvania; Contract No. AF 33(038)11898; 19 April 1950; Approximate Cost per Equipment, $212.00.

Lavoie Laboratories, Inc., Morganville, New Jersey; Contract No. AF 33(038) 7677.

TUBE COMPLEMENT:

1 JAN-1N21B.

REFERENCE DATA AND LITERATURE:

33A1-3-63-1 (Operation Instructions).
33A1-3-63-2 (Maintenance Instructions).
33A1-3-63-4 (Parts Catalog).
33A1-3-63-24 (Spare Parts List).

SHIPPING DATA:

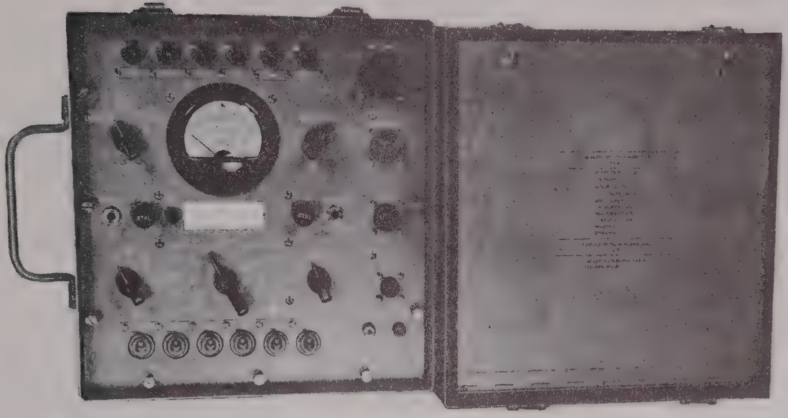
No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Over-all Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
1	Radio Test Set TS-257/ARW with accessories (Shelf Package, Water Resistant Carton)	1.91	15-1/2	15-1/2	13-3/4	30.00

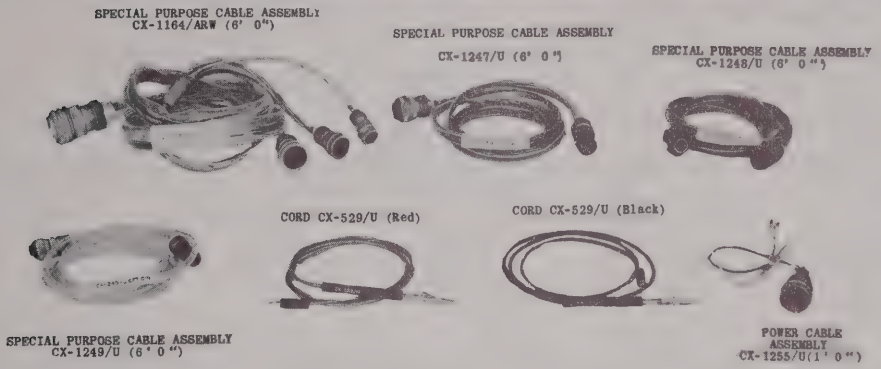
TEST SET TS-257/ARW

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Over-all Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Test Set, Radio TS-257/ARW (Complete)	Aluminum	7CAC-801319-2574 R16-AN-TS-257-ARW 3F4325-257	13	12	8	13.00
1	Cord (Red) CX-529/U		7CAC-468919-7 3E6000-529	48 long			0.13
1	Cord (Black) CX-529/U		7CAC-468919-7 3E6000-529	48 long			0.13
1	Cable Assembly CX-1164/ARW		7CAC-170270-1354 3E6000-1164-64	72 long			1.25
1	Cable Assembly CX-1247/U		7CAC-170270-1356 3E6000-1247-72	72 long			0.50
1	Cable Assembly CX-1248/U		7CAC-170270-1357 3E6000-1248-72	72 long			0.50
1	Cable Assembly CX-1249/U		7CAC-170270-1325 3E6000-1249-72	72 long			0.25
1	Cable Assembly CX-1255/U		7CAC-17026484 3E6000-1255-12	12 long			0.25
5	Crystal 1N21B		3300-234137020 2J1N21B				0.06
12	Lamp, Mazda 47 LM-52						0.13

TEST SET TS-257A/ARW




SPECIAL PURPOSE CABLE ASSEMBLY
CX-1164/ARW (6' 0")
SPECIAL PURPOSE CABLE ASSEMBLY
CX-1247/U (6' 0")
SPECIAL PURPOSE CABLE ASSEMBLY
CX-1248/U (6' 0")
CORD CX-529/U (Red)
CORD CX-529/U (Black)
SPECIAL PURPOSE CABLE ASSEMBLY
CX-1249/U (6' 0")
POWER CABLE
ASSEMBLY
CX-1255/U(1' 0")

UNCTIONAL DESCRIPTION:

A portable, self-contained instrument which provides circuits for measuring arious battery voltages and internal currents of circuit components such as relay ull-in and drop-out currents, and to provide lamp indicator and auxiliary control ircuits necessary for pre-flight or bench tests of the operation of the relays in radio eceiving sets and their associated servomechanisms. In addition, the modulated adio frequency output of transmitters can be detected and tested. External conections are provided for an additional function as an ohmmeter.

ELATIONSHIP TO OTHER EQUIPMENT:

This set is used to test Radio Receiving Sets AN/ARW-26, 26X, 26Y, and C-57B. It is electrically and mechanically interchangeable with Test Set TS-257/ RW except that Resistor R-103 has been changed from 100,000 ohms to 250,000 hms to accommodate new prime equipment relay circuits. Headset HS-23 or HS-33 s required but not supplied.

	AIR FORCE	NAVY	ARMY
YPE CLASS.	Standard		
TOCK NOS.	7CAC-801319-25517	R16-AN-TS-257A-ARW	3F4325-257A
ROCUREM'T INFO.: Spec. MIL-T-4373 (USAF) dtd 8 November 1951			
ROCUREM'T COG.: USAF		DESIGN COG.: USAF, ARL	
.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.2.6	
	- Electronics Test Equipment -		TS-257A/ARW

project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U.S.A.

TEST SET TS-257A/ARW

ELECTROMECHANICAL DESCRIPTION:

Power Supply: 1.5 volts, DC, and 6.0 volts, DC, supplied by one Battery BA-3 (1.5 volts) and one Battery BA-210/U (6.0 volts).

Ranges Covered: Internal Connection: 0 to 5, 10, 50, 100, and 300 volts, DC.
0 to 15 and 30 milliamperes, DC.
External Connection: 0 to 10 and 300 volts, DC.
0 to 50,000 ohms.

Basic Meter Size: 3 inches diameter.
Basic Meter Sensitivity: 5000 ohms per volt.
Basic Meter Full Scale Current: 200 microamperes.
Basic Meter Internal Resistance: 750 ohms.
Overall Accuracy: ±4% of full scale for voltage and current readings and of scale length for resistance readings.

MANUFACTURERS' OR CONTRACTORS' DATA:

Hauman Instrument Company, 70 Coolidge Hill Road, Watertown 72, Massachusetts; USAF Contract AF 33(604)7722, dated 19 May 1953; Approximate Cost per Unit, $310.00.

TUBE COMPLEMENT:

1 JAN-1N21B.

REFERENCE DATA AND LITERATURE:

SHIPPING DATA:

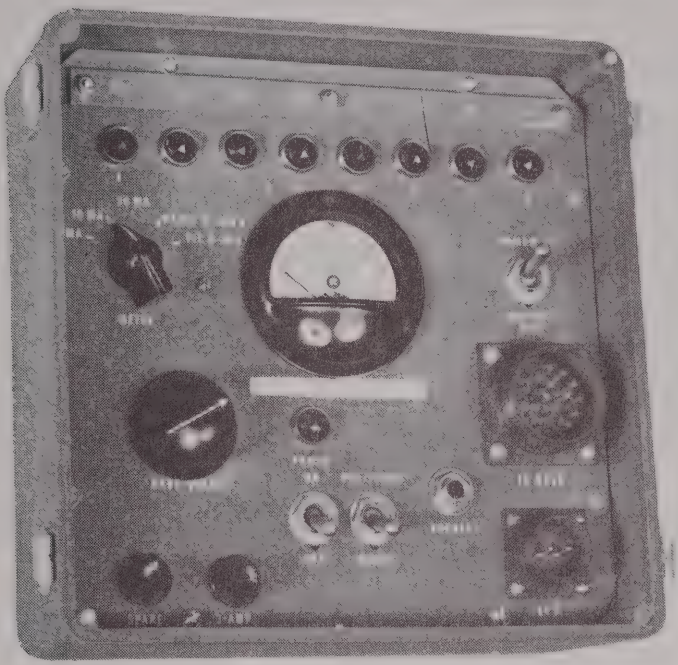
No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Over-all Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
1	Radio Test Set TS-257A/ARW with accessories (Shelf Package, Water Resistant Carton)	1.91	13-3/4	15-1/2	15-1/2	30.00

TEST SET TS-257A/ARW

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Over-all Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Test Set TS-257A/ARW (Complete)	Aluminum	7CAC-801319-25517 R16-AN-TS-257A /ARW 3F4325-257A	7-1/2	12-1/4	11-5/8	13.00
	Including:						
1	Combination Case	Aluminum		8	13	12	8.00
1	Cord CX-529/U (Red)		7CAC-468919-7 3E6000-529	48 long			0.13
1	Cord CX-529/U (Black)		7CAC-468919-7 3E6000-529	48 long			0.13
1	Cable Assembly CX-1164/ARW		7CAC-170270-1354 3E6000-1164-64	72 long			1.25
1	Cable Assembly CX-1247/U		7CAC-170270-1356 3E6000-1247-72	72 long			0.50
1	Cable Assembly CX-1248/U		7CAC-170270-1357 3E6000-1248-72	72 long			0.50
1	Cable Assembly CX-1249/U		7CAC-170270-1325 3E6000-1249-72	72 long			0.25
1	Cable Assembly CX-1255/U		7CAC-170270-84 3E6000-1255-12	12 long			0.25
5	Spare Crystal 1N21B		3300-23413 7020 2J1N21B				0.06
12	Spare Lamp, Mazda #47 LM-52						0.13

RELAY TEST SET TS-604/U
(TEST SET, RELAY, TS-604/U)



UNCTIONAL DESCRIPTION:

A portable test set used for pre-flight checking and maintenance testing of servo ontrol circuits in the receiver portions of radio receiving sets. It provides the ecessary connections and indicator lamps to demonstrate relay operation, and meter rcuits to show plate voltage, relay tube plate current, filament current and input ltage to radar set. All controls and indicators are located on the operating panel.

ELATIONSHIP TO OTHER EQUIPMENT:

LECTROMECHANICAL DESCRIPTION:

ower Supply: 19 to 30 volts, DC, 2 to 3 amperes.
late Voltage Measuring Range: 0 to 300 volts DC.
ilament Voltage Measuring Range: 0 to 30 volts DC.
ternal Impedance: 1000 ohms per volt meter sensitivity.
urrent Measuring Range: 0 to 1 milliamperes, 0 to 10 milliamperes, 0 to 30 milliamperes.

(Continued)

	AIR FORCE	NAVY	ARMY
YPE CLASS.	Standard		
TOCK NOS.	7CAC-801319-4		3F4325-604
ROCUREM'T INFO.: USAF, Spec. 7219, dtd. 21 Oct. 1948, ONG No. 47R41919			
ROCUREM'T COG.: USAF		DESIGN COG.: USAF, ARL	
.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.2.6	
- Electronics Test Equipment -			TS-604/U

project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

RELAY TEST SET TS-604/U
(TEST SET, RELAY, TS-604/U)

ELECTROMECHANICAL DESCRIPTION: (Continued)

Indicator Lights: 28-volt DC lamps indicate operation of eight relay circuits with provision for either common negative ground or common positive ground.

Switches: Power on and off, selector for either airplane or ground power supplies, type of receiver to be checked and voltage and current ranges to be measured.

Accuracy: ±5%.

Temperature Range: -55° C. to +55° C.

MANUFACTURERS' OR CONTRACTORS' DATA:

Phaostron Company, 151 Pasadena Avenue, South Pasadena, California; Contract No. AF 33(038)9791; Approximate Cost per Unit, $250.00.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 16-35TS604-2 (Operation and Service Instructions).
TO 16-35TS604-4 (Parts Catalog).

SHIPPING DATA:

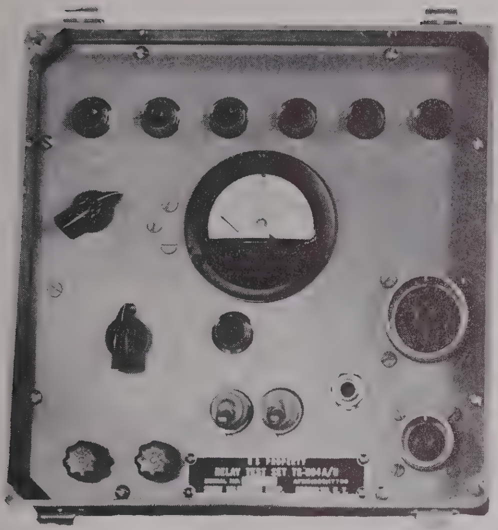
No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Over-all Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
1	Relay Test Set TS-604/U (Shelf Package)	0.49	9	9	10-1/2	14

RELAY TEST SET TS-604/U
(TEST SET, RELAY, TS-604/U)

QUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Over-all Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Relay Test Set TS-604/U	Aluminum	7CAC-801319-4 3F4325-604	8-3/4	8-3/4	9-3/4	13
1	Cable Assembly CX-1139/CRW			48 long	3/4 dia.		
1	Cable Assembly CX-1140/ARW			48 long	7/8 dia.		
1	Cable Assembly CX-1141/CRW			48 long	3/4 dia.		
1	Cable Assembly CX-1143/U				3/8 dia.		
18	Pilot Lamp (Spare)						
3	Fuse (Spare)						

RELAY TEST SET TS-604A/U



FUNCTIONAL DESCRIPTION:

A portable test set used for preflight checking and bench testing of servo control circuits in the receiver portions of radio receiving sets. It provides the necessary connections and indicator lamps to demonstrate relay operation, and meter circuits to show plate voltage, relay tube plate current, filament current and input voltage to radar set. All controls and indicators are located on the operating panel.

RELATIONSHIP TO OTHER EQUIPMENT:

Similar to TS-604/U except the "A" model has no Cable Assembly CX-1140/CRW or Switch 5103, the meter shunts are changed, and the case is fabricated instead of moulded.

ELECTROMECHANICAL DESCRIPTION:

Power Supply: 24±5 volts, DC, 2 to 3 amperes.

Plate Voltage Measuring Range: 0 to 300 volts, DC.

Filament Voltage Measuring Range: 0 to 30 volts, DC.

Meter Sensitivity: 1000 ohms per volt.

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.	Standard		
STOCK NOS.	7CAC-801319-33		3F4325-604A
PROCUREM'T INFO.: USAF Spec. MIL-R-4329			
PROCUREM'T COG.: USAF		DESIGN COG.: USAF, ARL	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.2.6	
	- Electronics Test Equipment -		TS-604A/U

is project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

RELAY TEST SET TS-604A/U

ELECTROMECHANICAL DESCRIPTION: (Continued)

Current Measuring Range: 0 to 1 milliampere, 0 to 10 milliamperes, 0 to 30 milliamperes.

Indicator Lights: 24-volt DC lamps indicate operation of six relay circuits with provision for either common negative ground or common positive ground.

Accuracy: ±5%.

Temperature Range: -55°C. (-67°F.) to +55°C. (+131°F.)

MANUFACTURERS' OR CONTRACTORS' DATA:

Shaw Television Corporation, 195 Front Street, Brooklyn 1, New York; USAF Contract No. AF 33(600)17785.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 33A1-12-57-1 (Operation and Service Instructions).

TO 33A1-12-57-4 (Illustrated Parts Breakdown).

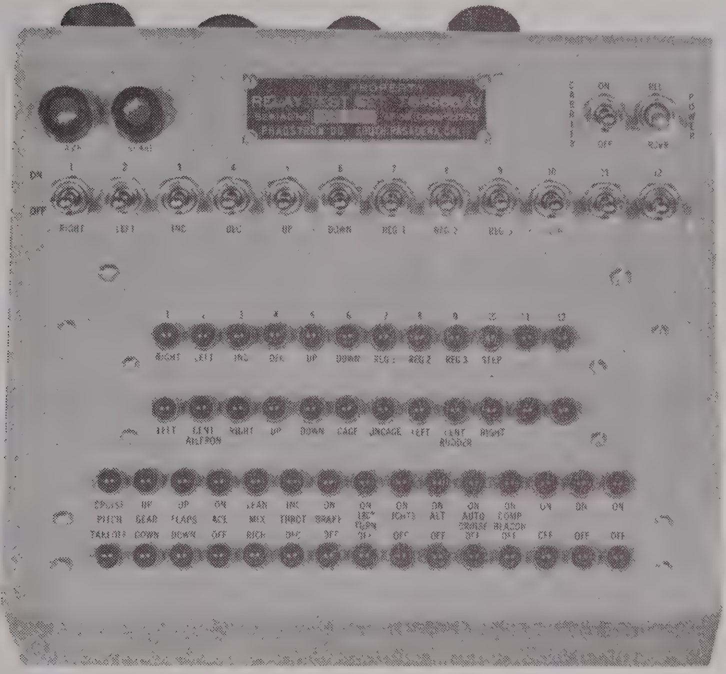
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
1	Relay Test Set TS-604A/U (Shelf Package)	0.49	9	9	10-1/2	14

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Relay Test Set TS-604A/U	Aluminum	7CAC-801319-33 3F4325-604A	8-1/4	8-1/2	9-1/4	11
1	Cable Assembly CX-1139/URW			48 long	3/4 dia.		
1	Cable Assembly CX-1141/CRW			48 long	3/4 dia.		
1	Cable Assembly CX-1143/U			48 long	3/8 dia.		
14	Pilot Lamp (Spare)						
2	Fuse (Spare)						

RELAY TEST SET TS-605/U
(TEST SET, RELAY, TS-605/U)



UNCTIONAL DESCRIPTION:

A portable, special purpose set used in checking operation of relay contacts and rcuits in radio receivers and transmitters. Indication is by visual observation of indicator lights on the front panel of the set. Thirteen single-pole single-throw ggle switches and one single-pole double-throw switch are provided on the front nel for operation of the set. It is used in organizational, field, and depot mainnance.

ELATIONSHIP TO OTHER EQUIPMENT:

This set is used in testing Radio Receiving Set AN/ARW-40, Radio Transmitng Set AN/ARW-41, and Radio Set AN/MRW-3.

LECTROMECHANICAL DESCRIPTION:

rcuit Information: By means of the special cables, and special provisions on the

(Continued)

	AIR FORCE	NAVY	ARMY
YPE CLASS.	Standard		
TOCK NOS.	7CAC-801319-45		
ROCUREM'T INFO.: Spec. MIL-R-5159, dated 7 Oct. 1949, USAF Dwg. 46G40360			
ROCUREM'T COG.: USAF		DESIGN COG.: USAF, ARL	
.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.2.6	
	- Electronics Test Equipment -		TS-605/U

roject was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U.S.A.

RELAY TEST SET TS-605/U
(TEST SET, RELAY, TS-605/U)

ELECTROMECHANICAL DESCRIPTION: (Continued)

equipment with which this set is used, relay circuits and relay energizing circuits are connected directly to the 54 indicating circuits, so that when the toggle switches are operated, the indicator lights will indicate relay operation. The relays under test provide pulses which actuate the five hermetically-sealed relays in the test set.

Power Supply: 28 volts, DC.
Output to Relay Energizing Circuits and Relay Circuits: 28 volts, DC, 1 ampere, in 54 channels.
Temperature Range: -55° C. to $+55^{\circ}$ C.
Humidity Range: Up to 95%, relative.
Altitude Range: Up to 10,000 feet.

MANUFACTURERS' OR CONTRACTORS' DATA:

Phaostron Company, 151 Pasadena Avenue, South Pasadena, California; Contract No. AF 33(038)21750; Approximate Cost per Unit, $300.00.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 16-35TS605-11 (Operation Instructions).
TO 16-35TS605-12 (Service Instructions).
TO 16-35TS605-13 (Overhaul Instructions).
TO 16-35TS605-14 (Illustrated Parts Breakdown).

SHIPPING DATA:

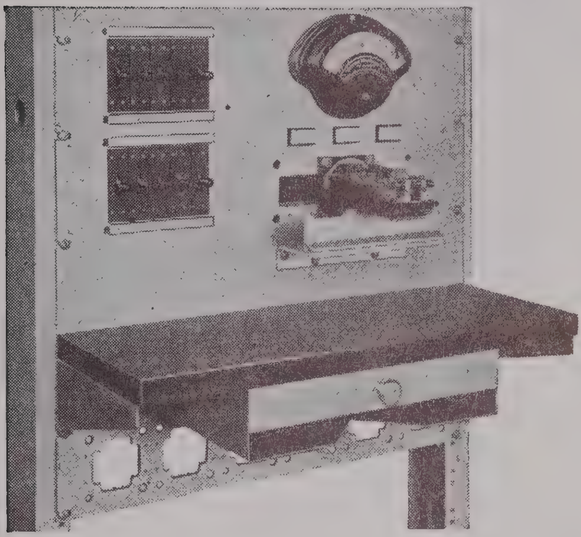
No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Over-all Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

RELAY TEST SET TS-605/U
(TEST SET, RELAY, TS-605/U)

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Over-all Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Relay Test Set TS-605/U	Aluminum	7CAC-801319-45	10-1/2	10-3/4	10	18.437 (Complete)
1	Case CY-665/U	Aluminum		10-1/2	10-3/4	10	
1	Special Purpose Cable Assembly CX-1071A/U			36 long			
1	Power Cable Assembly CX-1096/U			36 long			
1	Power Cable Assembly CX-1097/U			36 long			
1	Special Purpose Cable Assembly CX-1246/U			36 long			
1	Special Purpose Cable Assembly CX-1251/U			36 long			
1	Wrench TL-588/U						
2	Special Purpose Cable Assembly CX-1236/U			36 long			
40	Spare Indicator Light						

RELAY TEST SET
MODEL NO. 111A2
(Western Electric Company)*



UNCTIONAL DESCRIPTION:

A portable, general purpose test panel used for checking the electrical characeristics of polar relays. The circuit provides for contact, bias, and sensitivity ests. Operation of relays is tested by depressing control keys and observing the ndications on a milliammeter. The set is assembled on a steel panel arranged to nount on a standard 19" relay rack.

ELATIONSHIP TO OTHER EQUIPMENT:

This test set is used in testing the following Western Electric polar relay types: 09-FA, -FB, -FC, -FG, -FH, -FJ, 215-A, 215-H, 228-A or D160118, and 255-A*. t is similar to Western Electric Model 111A1 except that the A2 uses a different ower supply and can test more relay types.

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.			3F3935

PROCUREM'T INFO.:

PROCUREM'T COG.: DESIGN COG.: Commercial

F.I.I.N.: FUNCTIONAL CLASS. NO.: 10.2.6

- Electronics Test Equipment - Western Elec. 111A2

project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

RELAY TEST SET
MODEL NO. 111A2
(Western Electric Company)*

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The circuitry consists of keys, the milliammeter, connecting blocks, resistances, and condensers.

Power Supply: -24-volt signal battery, ±48-volt telegraph battery, ±130-volt telegraph battery, and 20 cycle per second supply*.

Meter Indicating Range: -100 to 0 to +100 milliamperes.

MANUFACTURERS' OR CONTRACTORS' DATA:

Western Electric Company, New York, New York.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

Western Electric Catalog No. 11 of Telephone Apparatus and Cable.

*"Copyright 1930, 1935, 1939, and 1950 Western Electric Company, Inc."

"Reproduced with permission of copyright owner."

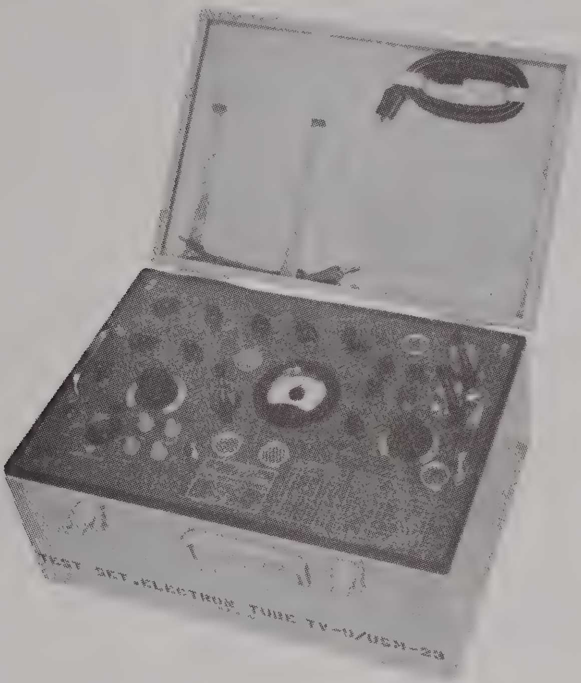
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Relay Test Set Model 111A2	Steel	3F3935	12-1/4	19	12-1/4	15

ELECTRON TUBE TEST SET AN/USM-23
(TEST SET, ELECTRON TUBE AN/USM-23)



UNCTIONAL DESCRIPTION:

A portable, general purpose, field type tube tester, especially designed for testng Geiger-Mueller and high voltage regulator tubes. The tester operates by the rinciple of ionization of radio-active material. This equipment is capable of testng radiation counter tubes types 5979/BS-1 and 5980/BS-2 and corona discharge oltage regulator tubes type 5962/BS-101. Provision is made for the insertion of dapters for testing other type tubes having similar characteristics. The following ests may be made: Counting Rate (Response), Plateau Slope, and Gamma Sensiivity for counter tubes; Operating Voltage and Voltage Regulation tests for corona ischarge voltage regulator tubes.

ELATIONSHIP TO OTHER EQUIPMENT:

LECTROMECHANICAL DESCRIPTION:

ircuit Information: The circuitry is made up of a regulated power supply, a fre-

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.			

PROCUREM'T INFO.: Spec. MIL-T-16213 (Ships)dated 1April 1951 & Am 1 dtd 30 Apr 53

PROCUREM'T COG.: Navy DESIGN COG.: Navy, BuShips

F.I.I.N.: FUNCTIONAL CLASS: 10.2.7

ELECTRON TUBE TEST SET AN/USM-23
(TEST SET, ELECTRON TUBE AN/USM-23)

ELECTROMECHANICAL DESCRIPTION: (Continued)

quency standard, a counting rate meter, a voltmeter, a radiation source, a precision voltage divider, and precision calibrating circuits.

Power Supply: 115 volts ±10%, AC, 60 cycles per second, single phase, 55 watts.

Frequency Standard: 100 cycles per second.

Counting Rate: 100 counts per second for 700 volts energizing potential.

Regulated Voltage Limits:

700 ±10 volts at 25 microamperes.

685 to 715 volts at 5 to 55 microamperes.

Radiation Rating: Not over 300 milliroentgens per week at any external point.

Surrounding Field Radiation Limit: Not over 0.01 milliroentgen per hour.

Ammeter Range: -250 to 0 to +250 microamperes, and marked "BAD" "CAL" "GOOD" "BAD."

Accuracy: Frequency Deviation not over 1 part in 3000.
Indicating Meter Reading Deviation not over ±3%.
Test Regulated Voltage Deviation not over ±0.75%.

Temperature Range: 0° C. to +50° C., operating.
-65° C. to +65° C., non-operating.

Altitude Range: Up to 30,000 feet, non-operating.

Humidity Range: Up to 90%, operating; up to 95% non-operating.

MANUFACTURERS' OR CONTRACTORS' DATA:

Electronic Products Company, Mt. Vernon, New York; Contract No. NObsr-52712 dated 28 June 1951. (100 interim equipments).

Victoreen Instrument Company, Cleveland, Ohio; Contract No. NObsr-52544, dated June 1951. (New development).

TUBE COMPLEMENT:

1 JAN-6X4, 2 JAN-9002, 1 JAN-5962/BS-101, 1 JAN-6AK5, 1 JAN-0A2, 1 JAN-5651, 1 JAN-12AX7, 2 JAN-12AU7, 1 JAN-5R4GY, 1 JAN-6AL5, 1 JAN-5692, 1 JAN-5964.

REFERENCE DATA AND LITERATURE:

NAVSHIPS 91936 (Instruction Book).

SHIPPING DATA:

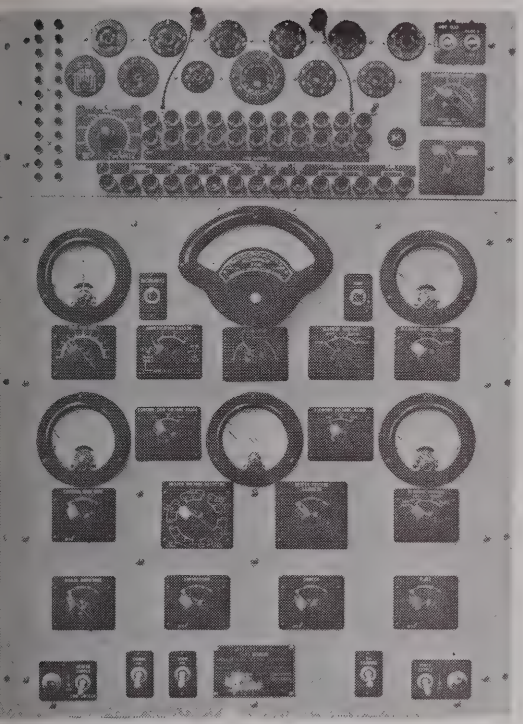
No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Over-all Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
1	Electron Tube Test Set AN/USM-23	2.24	11-1/2	21	16	45.6

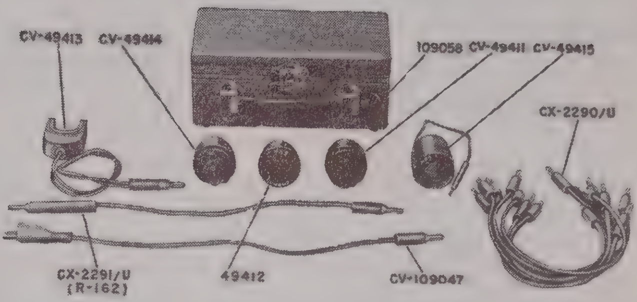
ELECTRON TUBE TEST SET AN/USM-23
(TEST SET, ELECTRON TUBE AN/USM-23)

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Over-all Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Electron Tube Test Set AN/USM-23 Including:	Aluminum		8-1/4	18	12	33.3
1	Test Set, Electron Tube TV-9/USM-23			6-7/8	18	12	
1	Cover CW-302/USM-23			1-1/8	18	12	
1	Power Cable CS-2278/U			72 long			
2	Test Lead						
3	Plug-in Holder						
2	Instruction Book			11	8-1/2	1/4	

ELECTRON TUBE TEST SET AN/USM-31





UNCTIONAL DESCRIPTION:

A general purpose equipment designed to perform dynamic and static tests on re-
iving type electron tubes. Transmitting, thyratron and gas tubes can also be
sted. Meter indications include transconductance (micromhos), grid current (mi-
oamperes DC), element current (milliamperes DC), control grid voltage (volts
), heater voltage (volts AC), and element voltage (volts DC). An adapter kit is
cluded to provide facilities for testing special tubes. All indications, controls,
d connections are on the front panel. The equipment is suitable for bench or rack
ounting.

ELATIONSHIP TO OTHER EQUIPMENT:

Similar to Navy Model OD-7 Vacuum Tube Analyzing Equipment except that the
/USM-31 provides additional transconductance ranges; additional voltage and cur-
nt ranges; electron tube amplifier for the lowest transconductance range; and a
as rectifier for the negative grid potentials. Similar to Weston Model 686, Type
, except that the commercial model does not include the adapter kit.

	AIR FORCE	NAVY	ARMY
YPE CLASS.			
TOCK NOS.			
ROCUREM'T INFO.: Navy Spec. A-331 (Ships)			
ROCUREM'T COG.: Navy		DESIGN COG.: Navy, BuShips	
.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.2.7	
- Electronics Test Equipment -			AN/USM-31

roject was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U.S.A.

ELECTRON TUBE TEST SET AN/USM-31

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: Essentially this test set is a low impedance power supply me tered for potentials and currents and provided with a means of introducing an A signal into the grid bias line and measuring the AC component in the plate circui

Power Supply: 115 ±10 volts or 210 ±10 volts, 50 to 60 cycles per second, singl phase, 185 watts.

Transconductance Meter Ranges:

Red Scale:

Range Full Scale Micromhos	Grid Signal Volts	Equivalent Meter Sensitivit
600	0.5	0.3 ma
3000	1.0	3.0 ma
6000	0.5	3.0 ma
15000	0.2	3.0 ma
30000	0.1	3.0 ma

On the 600 micromho range an electron tube amplifier is used.

Black Scale:

Range Full Scale Micromhos	Grid Signal Volts	Meter Sensitivity
3000	1.0	Changes with Amplificatio Factor Setting
6000	1.0	Amplification Factor Settings 3.5 - 15

Grid Current Meter Ranges:

Low Range: 15-0-15 microamperes DC.

High Range: 1500-0-1500 microamperes DC.

Element Current Meter Ranges:

0 to 5, 10, 50, and 100 milliamperes DC.

Control Grid Voltage Ranges: 0 to 10, 0 to 50 volts DC.

Heater Voltage Ranges: 0 to 2, 4, 8, 20, 50, and 125 volts AC.

Element Voltage Ranges: 0 to 150 and 0 to 300 volts DC.

MANUFACTURERS' OR CONTRACTORS' DATA:

Weston Electrical Instrument Corporation, Newark, New Jersey; Contract N NOBSr 52388, dated June 1951.

TUBE COMPLEMENT:

1 JAN-3A4, 1 JAN-5U4G, 1 JAN-6X4, 1 JAN-0B2, 1 JAN-6C4.

REFERENCE DATA AND LITERATURE:

NavShips 91734 (Instruction Book).

NavShips 91849 (Tube Data Charts and Operator's Instructions).

ELECTRON TUBE TEST SET AN/USM-31

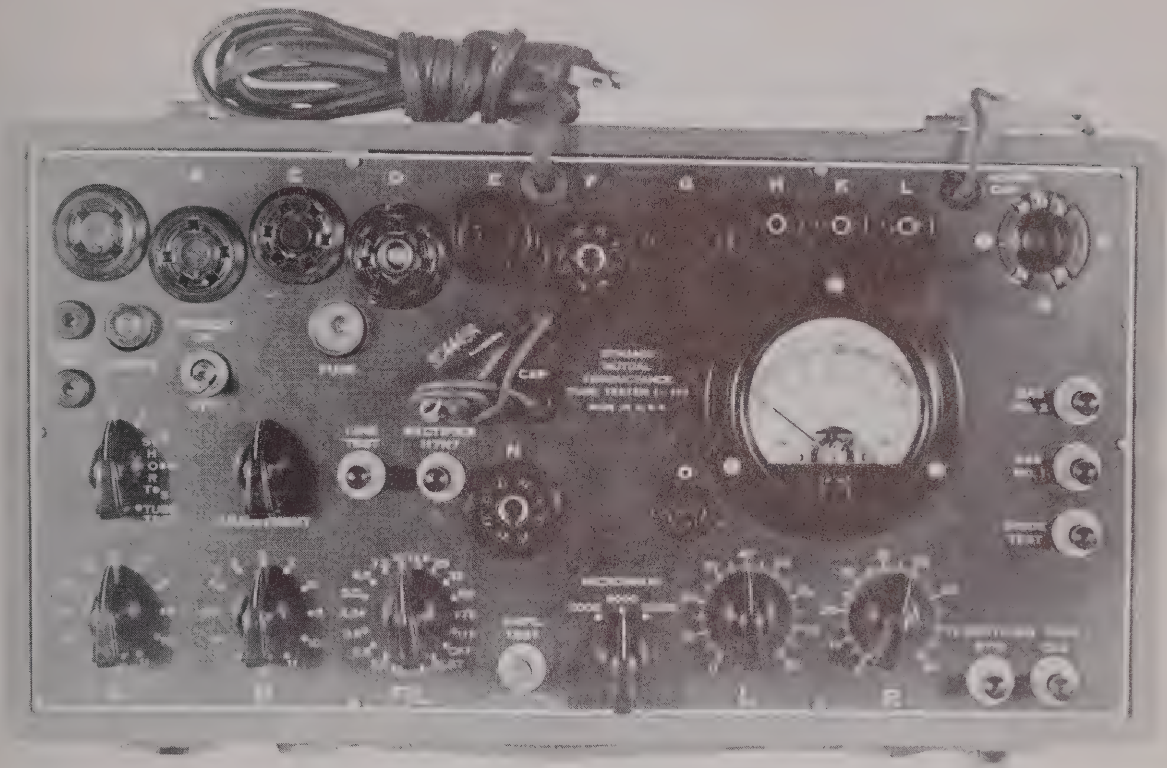
QUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Over-all Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Electron Tube Test Set AN/USM-31 Including:	Metal					
1	Electron Tube Testing Equipment TV-8/USM-31			26-1/8	19-7/8	7-3/8	105
1	Accessory Kit CV-49416			7-1/4	4-1/4	2-3/4	3
1	Tube Data Chart			8-1/2	11		7 oz.
1	Instruction Book			8-1/2	11		10 oz.
11	Patch Cord Leads CX-2290/U			14 long			8 oz.
1	Resistor Patch Cord CX-2291/U			15 long			1 oz.

HIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Over-all Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
1	Electron Tube Test Set AN/USM-31	20.8				180

TUBE TESTER I-177
(TEST SET, ELECTRON TUBE, I-177)



This research was supported by the USAF under Contract AF 33(038)12874 and monitored by the Wright Air Development Center, ARDC - Carl L. Frederick and Associates, Bethesda, Maryland - Multilithed in U.S.A.

FUNCTIONAL DESCRIPTION:

A portable, general purpose and self-contained instrument designed to measure dynamic, mutual conductance qualities of tubes, detect presence of gas within tubes, detect and measure internal shorts within tubes, check emission of rectifier tubes, detect intermittent contacts between tube electrodes not detected under normal short tests, and test pilot lamps having a miniature base.

RELATIONSHIP TO OTHER EQUIPMENT:

Replaced by Tube Tester TV-2/U and TV-7/U. Similar to Hickok Model 545.

ELECTROMECHANICAL DESCRIPTION:

Power Supply: 105 to 125 volts, AC, single phase, 50 to 60 cycles per second, 5 amperes.

Mutual-Conductance Range: 0 to 3000, 6000, and 15,000 micromhos.

Accuracy: ±7% of full scale (mutual conductance readings only).

Filament Range: 1.1 to 117 volts.

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-801318-573	N17-L-63323-3271	3F5700-177
PROCUREM'T INFO.:	Dwg. No. 1064, Army Spec. No. 71-1757.		
PROCUREM'T COG.:	Army	DESIGN COG.:	Army - ESL
F.I.I.N.:		FUNCTIONAL CLASS:	10.2.7
	- Electronics Test Equipment -		I-177

TUBE TESTER I-177
(TEST SET, ELECTRON TUBE, I-177)

MANUFACTURERS' OR CONTRACTORS' DATA:
Order Nos. 6397-Phila-44, 24475-Phila-44 and 27612-Phila-44, August 1944.

TUBE COMPLEMENT:
1 JAN-83, 1 JAN-5Y3 GT/G.

REFERENCE DATA AND LITERATURE:
TM 11-2627 (Technical Manual).

SHIPPING DATA:

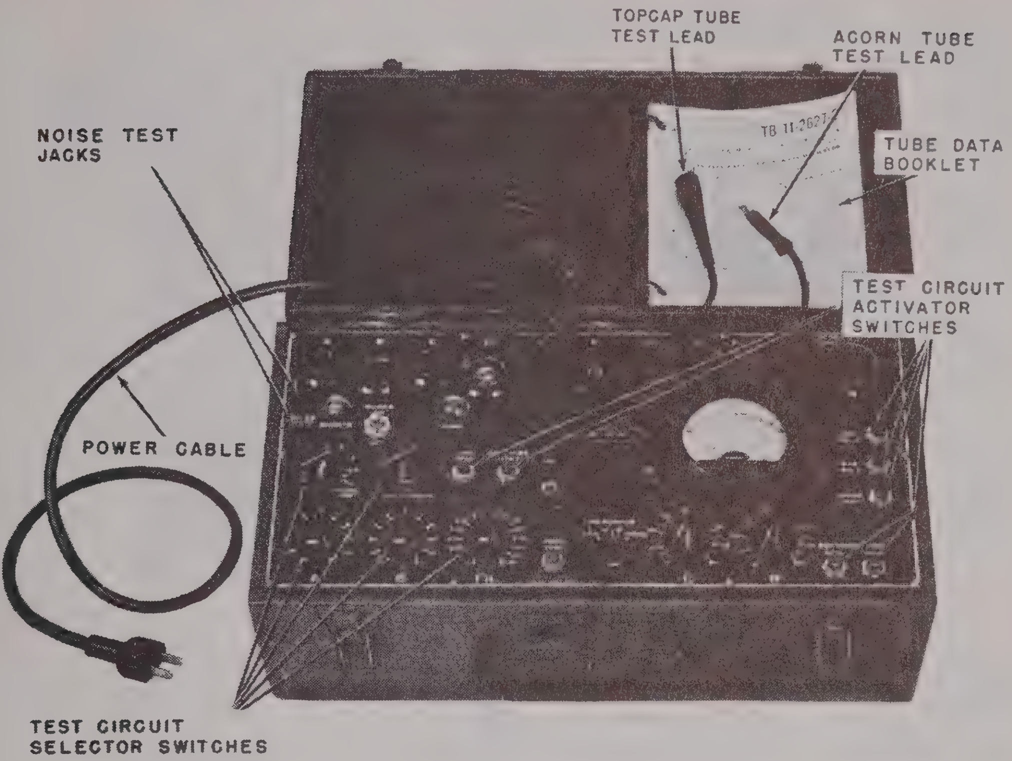
No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Over-all Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
1	Tube Tester with accessories, I-177. (Shelf package.)	0.87	8	17.9	10.5	17

TUBE TESTER I-177
(TEST SET, ELECTRON TUBE, I-177)

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Over-all Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Tube Tester I-177	Metal	7CAC-801318-573 R16-AYS-I-177 3F5700-177	5-3/4	15-1/2	8-1/2	16.5
1	Adapter M-418		3300-286046670 2Z299-418	2-3/4	2-5/8	1-3/4	0.38
1	Miniature Tube Pin Die TL-220		6Q31220	2 dia.	1/2		0.67
1	Miniature Tube Socket Tool TL-219		6R38639	3/4 dia.	1-3/4		0.12
1	Plate Cap Lead		3300-327974630 3F5700-177/L2	13-1/2 long			0.30
1	Tube Test Data Cards TB11-2627-2			7	5-1/2	1/8	0.12
1	Tube JAN-5Y3GT		3300-234390000 2J5Y3GT	3-3/4	1-1/4	1-1/4	0.0375
1	Tube JAN-83		3300-274960000 2T183	6	2	2-1/4	0.75
1	Instruction Manual TM11-2627		6D13260	9	6	1/8	
1	Lamp, Glow		8800-470793 3F4056A/L2				
1	Lead, Test		3300-327974630 3F5700-177/L2	14 long			
1	Lamp, Incandescent		8800-445300 6Z6806.14				

TUBE TESTER I-177-A
(TEST SET, ELECTRON TUBE I-177-A)


TOPCAP TUBE TEST LEAD
ACORN TUBE TEST LEAD
NOISE TEST JACKS
TB 11-2627-2
TUBE DATA BOOKLET
TEST CIRCUIT ACTIVATOR SWITCHES
POWER CABLE
TEST CIRCUIT SELECTOR SWITCHES

and monitored by the Wright Air Development Center, ARDC - Carl L.
Frederick and Associates, Bethesda, Maryland - Multilithed in U.S.A.

FUNCTIONAL DESCRIPTION:

A portable, general purpose, self-contained instrument designed to measure dynamic mutual conductance qualities of tubes, detect presence of gas within tubes, detect and measure internal shorts within tubes, check emission of rectifier tubes, detect intermittent contacts between tube electrodes not detected under normal short tests, and test pilot lamps having miniature bases.

RELATIONSHIP TO OTHER EQUIPMENT:

Similar to Tube Tester I-177 except that the I-177-A is contained in a metal case, is tropicalized and has a rearranged lay-out of the panel controls.

Similar to Hickok Model 545.

Tube Socket Adapter Kit MX-949/U is used in conjunction with I-177-A for testing miniature and subminiature tubes.

ELECTROMECHANICAL DESCRIPTION:

Power Supply: 115 volts ±10%, AC, 60 cycles, single-phase.

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.	Limited Standard		Standard
STOCK NOS.	7CAC-801318-573	ASO-R16-AYS-I-177A	3F5700-177A
PROCUREM'T INFO.:	Army Spec. No. 71-1757		
PROCUREM'T COG.:	Army	DESIGN COG.:	Army, ESL
F.I.I.N.:		FUNCTIONAL CLASS:	10.2.7

TUBE TESTER I-177-A
(TEST SET, ELECTRON TUBE I-177-A)

ELECTROMECHANICAL DESCRIPTION: (Continued)
Mutual-Conductance Range: 0 to 3000, 6000, and 15,000 micromhos.
Accuracy: ±7% of full scale.
Filament Range: 1.1 to 117 volts.

MANUFACTURERS' OR CONTRACTORS' DATA:

Munston Manufacturing and Service, Incorporated, New York, New York, Order No. 8539-PHILA-48.

TUBE COMPLEMENT:

1 JAN-5Y3GT, 1 JAN-83.

REFERENCE DATA AND LITERATURE:

TM 11-2627, C1 and C2 (TO 16-40I177-5) (Instruction Book).
TB 11-2627-2 (TO 16-40I177-6) (Instruction Book).

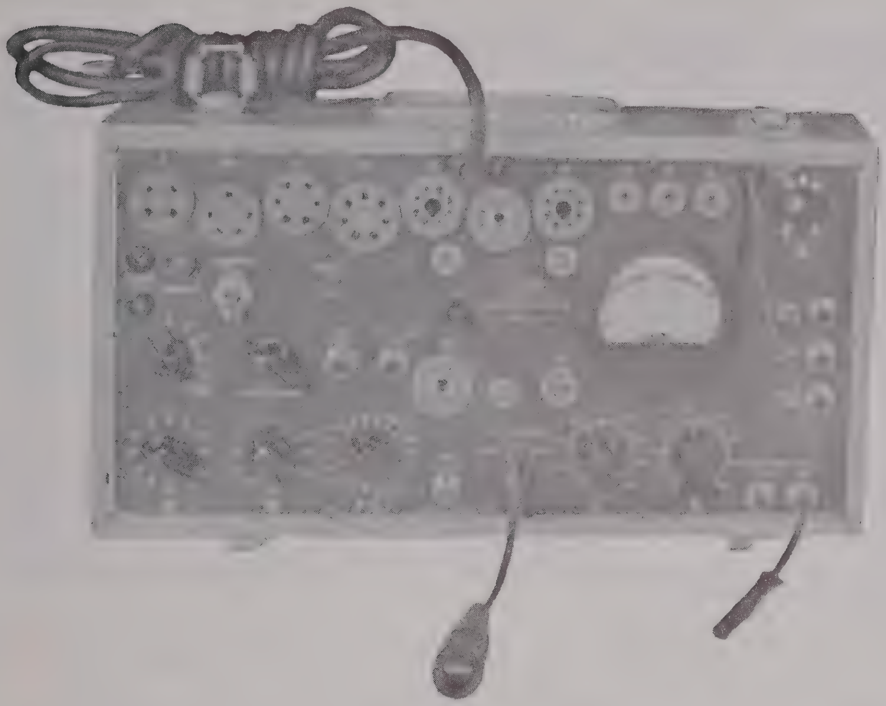
EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Over-all Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Tube Tester I-177-A (Complete)	Metal	7CAC-801318-573 R16-AYS-I-177-A 3F5700-177	5-3/4	15-1/2	8-1/2	15.75
1	Instruction Book						
						Total	15.75

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Over-all Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
1	Tube Tester, I-177-A (Shelf package - water resistant carton).	1.51	9-1/2	23	12	26.00

TUBE TESTER I-177-B
(TEST SET, ELECTRON TUBE, I-177-B)



UNCTIONAL DESCRIPTION:

A portable, general purpose, self-contained instrument designed to measure ynamic mutual conductance qualities of tubes, detect presence of gas within tubes, etect and measure internal shorts within tubes, check emission of rectifier tubes, nd detect intermittent contacts between tube electrodes not detected under normal hort tests. It will check receiving, acorn, and small transmitting tubes, and iniature base pilot lamps.

ELATIONSHIP TO OTHER EQUIPMENT:

Similar to Tube Tester I-177 except that in the I-177-B the transformer has been edesigned to meet JAN specifications, JAN components have been substituted wherever possible, and a small terminal board has been added to the rear of the chassis r mounting two capacitors and one resistor.

Similar to Hickok Model 545.

Tube Socket Adapter Kit MX-949A/U is used in conjunction with I-177-B for esting miniature and subminiature tubes.

(Continued)

	AIR FORCE	NAVY	ARMY
YPE CLASS.	Standard		
TOCK NOS.		R16-AYS-I-177B	3F5700-177B
PROCUREM'T INFO.:	Army Spec. No. 71-1757		
PROCUREM'T COG.:	Army	DESIGN COG.:	Army, ESL
.I.I.N.:		FUNCTIONAL CLASS. NO.:	10.2.7
	- Electronics Test Equipment -		I-177-B

project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

TUBE TESTER I-177-B
(TEST SET, ELECTRON TUBE, I-177-B)

ELECTROMECHANICAL DESCRIPTION:

Power Supply: 115 volts ±10%, AC, 60 cycles per second, single phase.
Mutual-Conductance Range: 0 to 3000, 6000, and 15,000 micromhos.
Accuracy: ±7% of scale reading.
Filament Range: 1.1 to 110 volts.

MANUFACTURERS' OR CONTRACTORS' DATA:

Supreme, Incorporated, Greenwood, Mississippi. Order No. 20566-PHILA-49.

TUBE COMPLEMENT:

1 JAN-5Y3GT, 1 JAN-83.

REFERENCE DATA AND LITERATURE:

TB 11-2627-2 (TO 16-40I177-6) (Tube Test Data Cards).
TM 11-2627, C1, C2, and Supp. (TO 16-40I177-5) (Instruction Book).

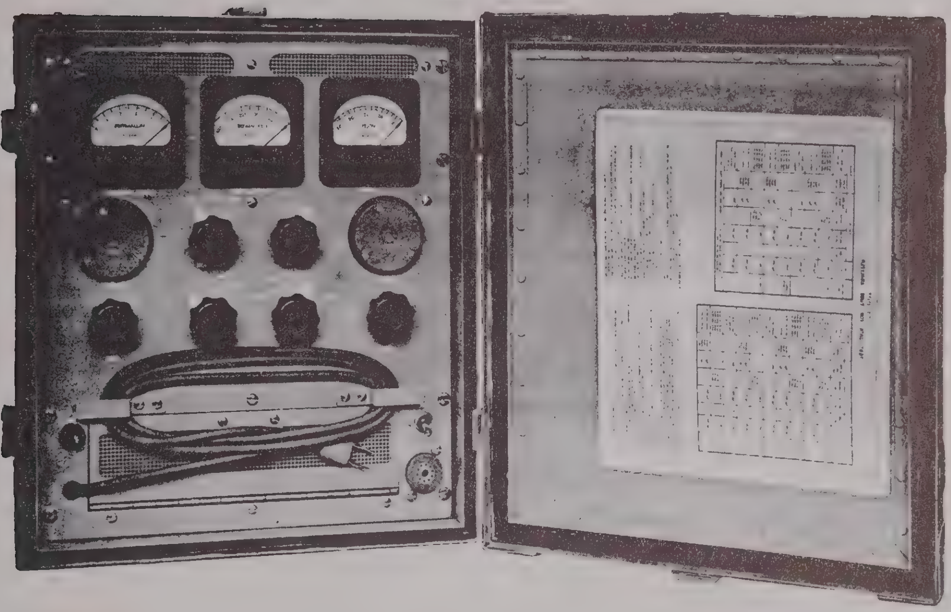
EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Over-all Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Tube Tester I-177-B	Steel	R16-AYS-I-177B 3F5700-177B	8	15-3/8	5-1/2	17.5
1	Instruction Book						

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Over-all Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
1	**Tube Tester I-177-B (Domestic Package-water Resistant Carton)**	1.51	9-1/2	23	12	26.00

ANALYZER, ELECTRON TUBE
Part No. LT-3089A
(Lear, Incorporated)



FUNCTIONAL DESCRIPTION:

A portable, special purpose instrument designed to test 12AY7 and 6072 type electron tubes under simulated operating conditions for interelement leakage, transconductance, plate current and balance. Panel meters provide visual indication of the electrical performance of the tube under test and visual indication for the analyzer calibration. A calibration card is provided for corrected meter readings.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: A potentiometer connected across the input circuit controls the line voltage applied to the power supply transformer. A meter monitors the applied line voltage and provides a calibration mark for proper voltage adjustment. The power supply consists of a power transformer, a rectifier tube, voltage regulator tubes and the associated circuitry for suppling the analyzer

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.		Standard	
STOCK NOS.		R88LA-LT-3089A	

PROCUREM'T INFO.:

PROCUREM'T COG.: Navy — DESIGN COG.: Commercial

F.I.I.N.: 6625-562-5785 — FUNCTIONAL CLASS. NO.: 10.2.7

Lear LT-3089A

ANALYZER, ELECTRON TUBE
Part No. LT-3089A
(Lear, Incorporated)

ELECTROMECHANICAL DESCRIPTION: (Continued)

with the proper voltages. For leakage tests the direct voltage is obtained from across a selected load resistor which is applied to the control grid of a balanced direct voltage amplifier. A meter in the plate circuit provides leakage indications. When testing the transconductance of a tube an alternating voltage is applied simultaneouly to both control grids of the tube under test. The alternating voltage across the plate load resistor is applied to the control grid of a voltage amplifier tube. The output voltage of the amplifier tube is rectified by a full wave rectifier consisting of four germanium crystals and applied to a microammeter for transconductance indications. Balance tests are made by appling an alternating signal from the power supply to the control grids of the tube under test. The voltages developed across the plate load resistors are fed to the primary winding of a transformer. If the two sections of the tube under test are balanced for a given bias on the grid, the alternating plate currents flowing throught the plate load resistors will be equal, will cancel each other and the indicating meter will read zero. If the tube is unbalanced the presence or degree of unbalance between the two sections will be indicated by the microammeter reading.

Power Supply: 115 ±5 volts, AC; 60 ±4 cycles per second.

Meter Ranges:
- Input Voltage: 0 to 150 volts, AC.
- Plate Current: 0 to 5 milliamps.
- Transconductance-Balance-Leak: 0 to 50 microamps.

MANUFACTURERS' OR CONTRACTORS' DATA:

Lear, Incorporated, 110 Ionia N. W., Grand Rapids 2, Michigan; Approximate Cost per Unit, $1899.94.

TUBE COMPLEMENT:

1 JAN-OA2, 1 JAN-OB2, 2 JAN-12AU7, 1 JAN-6X4.

REFERENCE DATA AND LITERATURE:

NavAer 17-15KD-501 (Instruction Book).

SHIPPING DATA:

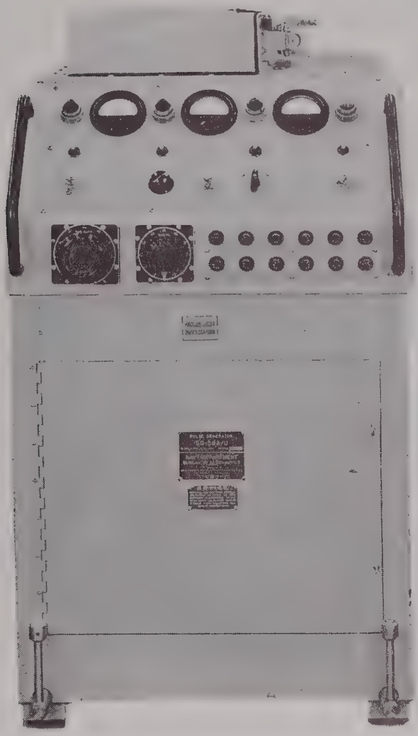
No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
	Analyzer, Electron Tube Lear LT-3089A					

ANALYZER, ELECTRON TUBE
Part No. LT-3089A
(Lear, Incorporated)

QUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Analyzer, Electron Tube Lear LT-3089A		R88LA-LT-3089A				

PULSE GENERATOR SG-58A/U



FUNCTIONAL DESCRIPTION:

A special purpose pulse generator designed to season the type 4J50 magnetron under actual operating conditions in order to eliminate arcing and erratic operation.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The pulse generator provides three pulse repetition rates and correct plate and filament voltages. Aging is brought about by a gradual increase of the applied potential until arcing ceases at the proper operating values. All operating controls are located on the front panel of the generator. Magnetron filament voltage, plate current and voltage can be continually monitored by the three indicators provided. The magnetron under test, a directional coupler, test jack, and a dummy load are located on the top portion of the generator cabinet. The test jack, located on the directional coupler, provides an attenuated sample of the magnetron output for observation by a spectrum analyzer.

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.			
PROCUREM'T INFO.:			
PROCUREM'T COG.: Navy		DESIGN COG.:	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.2.7	
- Electronics Test Equipment -			SG-58A/U

PULSE GENERATOR SG-58A/U

ELECTROMECHANICAL DESCRIPTION: (Continued)

Power Supply: 115 volts, AC, 50 cycles per second to 1000 cycles per second in three ranges, 50 to 230, 230 to 700, 700 to 1000 cycles per second.

Pulse Length Repetition Rate: 2.25 microseconds, 300 pulses per second; 1.75 microseconds, 550 pulses per second; 0.4 microseconds, 2500 pulses per second.

Trigger Delay: 0, 0.5, 1.0 or 2 microseconds.

MANUFACTURERS' OR CONTRACTORS' DATA:

Model Engineering and Manufacturing, Incorporated, 2800 Milwaukee Avenue, Chicago 18, Illinois, for units fabricated under Contract No. N383s-1484A. All others are manufactured by the Westinghouse Electric Corporation, Air Arm Division, Friendship International Airport, Baltimore, Maryland.

TUBE COMPLEMENT:

1 5Y3, 2 12AU7, 1 807, 4 371B, 1 5C22.

REFERENCE DATA AND LITERATURE:

NavAer-16-35SG58-501, Handbook Operations and Service Instructions.

EQUIPMENT SUPPLIED:

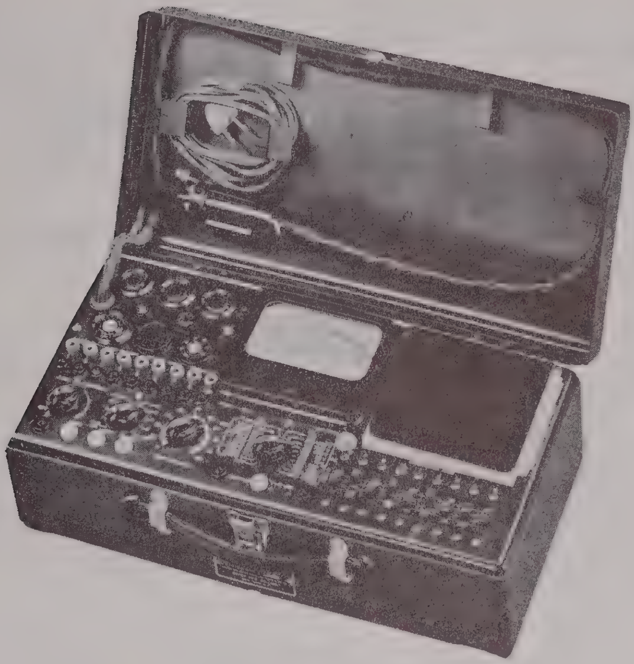
Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Pulse Generator SG-58A/U						

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
	Pulse Generator, SG-58A/U					

TEST SET TS-397/U

and monitored by the Wright Air Development Center, ARDC - Carl L.
Frederick and Associates, Bethesda, Maryland - Multilithed in U.S.A.



FUNCTIONAL DESCRIPTION:

A portable, general purpose, emission type tube checker and multimeter for making measurements of audio frequency output, AC and DC voltages, direct current, resistance, and capacitance. It can also be used as a free-point tester to make voltage and current measurements at tube socket terminals while the power supply of the equipment being tested is turned on. The tester provides sockets for 4 prong, 5 prong, 6 prong, combination large and small 7 prong, 8 prong octal, 8 prong loctal, 5 prong Bantam Jr., 7 prong miniature, and 7 prong midget tubes. Pilot lamps can be tested in a special socket located in the center of the 7 prong socket. A special BN adapter for tests of acorn tubes and a lead for testing tubes with top caps are provided.

RELATIONSHIP TO OTHER EQUIPMENT:

Similar to Espey Model 104.

ELECTROMECHANICAL DESCRIPTION:

Power Supply: 105 to 130 volts, AC, 60 cycles per second, single phase; 1.5 volts

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	1600-327724420		3F4072-11
PROCUREM'T INFO.: SigC Spec. 71-810			
PROCUREM'T COG.: Army		DESIGN COG.: Army, SigC.	
F.I.I.N.:		FUNCTIONAL CLASS: 10.2.7	

ELECTROMECHANICAL DESCRIPTION: (Continued)

supplied by one 1.5 volt battery BA-30, and 22.5 volts supplied by one 22.5 volt battery BA-2 required for operation of ohmmeter section.

Voltage Range: 0 to 10, 50, 250, 500, 1000 volts AC or DC.
Current Range: 0 to 1, 10, 50, 250 milliamperes DC.
Resistance Range: 0.1 to 500, 150,000 1,500,000, 15,000,000 ohms.
Capacitance Range: 0.001 to 10 microfarads.
Voltmeter Sensitivity: 10000 ohms per volt, DC.
2000 ohms per Volt, AC.
Meter Movement: 100 microamperes for full scale deflection.

MANUFACTURERS' OR CONTRACTORS' DATA:

Espey Manufacturing Company, Inc., 528 East 72nd Street, New York, New York. Army Order 17799-1-45, and Order 21932-PHILA-42 dated 26 June 1942, Approximate Cost Per Unit, $60.00, 1946.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TM 11-303 (Instruction Book for I-56-C, -D, -H, -J).

SHIPPING DATA:

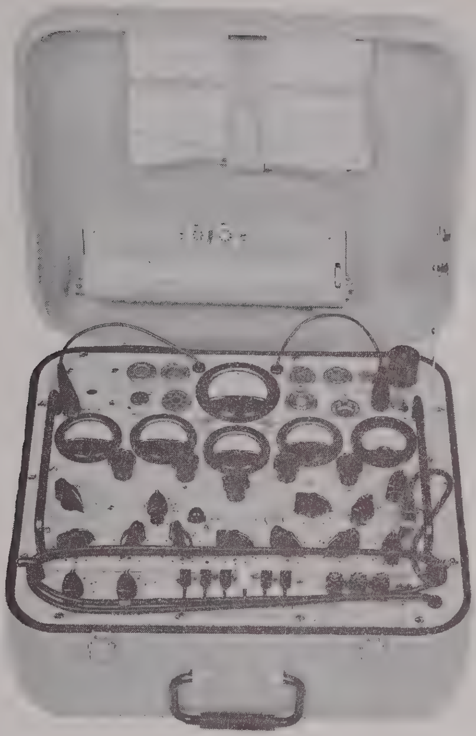
No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Over-all Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

TEST SET TS-397/U

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Over-all Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Test Set TS-397/U		1600-327724420 3F4072-11	15-1/2	5-1/2	7-1/2	17.25
1 Set	7 Adapter Plugs		2Z307-1 thru -6	6-1/4	4	3/4	0.40
1	BN Adapter		3300-327580000 3F4056C/A2				0.40
1 Pair	Test Lead		3Z4056C/L2				
1	Alligator Clip		8800-154780 3Z1087				0.15

TEST SET, ELECTRON TUBE TV-2/U



FUNCTIONAL DESCRIPTION:

A portable, general purpose, self-contained instrument designed to measure dynamic mutual conductance qualities of commercial and JAN type electron tubes of the receiving and low power transmitting class using a simple numerical scale, detect internal shorts within tubes, check emission of rectifier tubes, detect and measure leakage between tube elements, measure gas current at maximum and minimum voltages in gas regulator tubes, measure filament voltages and check filament circuit continuity, check pilot lamp filament circuit continuity, detect presence of gas within vacuum tubes, check electron ray tube operation, check firing point of thyratrons, and check ballast tubes for proper operation. A selective interlocking switching arrangement is provided on the control panel so that any tube tested will have its proper electrode voltages provided. The unit has two multipurpose tube clips. All tube sockets necessary to accommodate any of the tubes capable of being tested on this set are provided on the control panel. A printed roll chart showing settings of all controls, switches, and rejection limits for all tubes except ballast tubes is contained in a compartment in the cover of the set with a mechanism for

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.	Standard		
STOCK NOS.			3F3952-2

PROCUREM'T INFO.: Spec. MIL-T-10441A(SigC) dated 27 November 1951.

PROCUREM'T COG.: Army DESIGN COG.: Army, ESL

F.I.I.N.: FUNCTIONAL CLASS: 10.2.7

- Electronics Test Equipment - TV-2/U

This research was supported by the USAF under Contract AF 33(038)12897 and monitored by the Wright Air Development Center, ARDC - Carl L. Frederick and Associates, Bethesda, Maryland - Multilithed in U.S.A.

TEST SET, ELECTRON TUBE TV-2/U

FUNCTIONAL DESCRIPTION: (Continued)
manipulating the roll chart. Information on ballast tubes is in the instruction book. Shorts and filament continuity are indicated on a neon lamp. Plate, screen, and bias DC voltages are indicated on individual meters. Signal voltage is indicated on an AC meter. A percent quality meter indicates transconductance in equivalent percentage values. A signal check ammeter indicates signal level to assure proper level for each type of tube tested. A microammeter indicates emission current of tubes tested. The plate voltmeter has a scale to indicate leakage in megohms of resistance between tube elements. A separate ammeter reads gaseous conduction current through gas voltage regulator tubes. A rectifier meter measures filament voltage of tubes tested. Presence of gas in vacuum tubes is indicated on the percent quality meter. An electron ray tube circuit shows eye-open, eye-closed indication. A special circuit indicates operation of ballast tubes. This equipment is used in depot testing and maintenance.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Power Supply: 115 volts ±10%, AC, single phase, 50 to 1000 cycles per second, 100 watts.

Mutual Conductance Range: 0 to 80,000 micromhos, uncalibrated.

Percent Quality Meter Range: 150 scale divisions, 75 major divisions, numbered in multiples of ten.

Filament Range: 0.625 to greater than 117 volts.

Gas Check Sensitivity: 1 microampere or more of gas current within the tube under test is indicated on the tester.

Short Check Indication: Any leakage or shorting between tube elements when 25 volts DC is placed across them is indicated. Sensitivity of this indication is 3000 ohms for 25 volts.

Leakage Indication: 0 to 0.25, 0 to 0.5, 0 to 1.0 megohm scales on the plate voltmeter.

Emission Current Indication: 3.5, 12.5, 56, 119 milliamperes, maximum.

Gas Regulator Current Indication: 1.3, 5, 10 milliamperes, minimum. 3.5, 30, 50 milliamperes, maximum.

Filament Voltage Indication: 0 to 300, 0 to 10, 0 to 30, 0 to 100 volts, DC; green line at 0.625, blue line at 117.

Grid Bias Indication: 0 to 5, 0 to 10, 0 to 50 volts, DC.

Plate Voltage Indication: 0 to 250 volts, DC.

Screen Voltage Indication: 0 to 250 volts, DC.

Tube Socket Types: (1 of each type).

4 contact, 5 contact, 6 contact, 7 contact (combination for small and large prong tubes), 7 contact (miniature), 8 contact (octal), 8 contact (lock-in), 9 contact (miniature), 8 contact (circular pin arrangement - subminiature), 7 contact ("in line" - subminiature), 8 contact (long lead subminiature adapter).

TEST SET, ELECTRON TUBE TV-2/U

ELECTROMECHANICAL DESCRIPTION: (Continued)

Signal Level Indication: 0.25, 0.5, 2.5 volts, AC, 50 to 1000 cycles per second.

Accuracy (full scale):

±15% of indicated equivalent percent quality under specified operating conditions.
±50,000 ohms interelectrode resistance.
±5% filament voltage (in tubes tested).
±1.5% signal level.
±2% of full scale reading on all other meters.

Temperature Range: -4° F. to +125° F., operating; -80° F. to +160° F., storage.

MANUFACTURERS' OR CONTRACTORS' DATA:

CBS-Columbia, Inc., Brooklyn, New York; Army Contract No. DA36-039-sc-36528; Order No. 11654-PH-52-93; Approximate Cost per Unit, $289.00.

TUBE COMPLEMENT:

2 JAN-6X4, 1 JAN-83.

REFERENCE DATA AND LITERATURE:

Manufacturers' Instruction Book.

SHIPPING DATA:

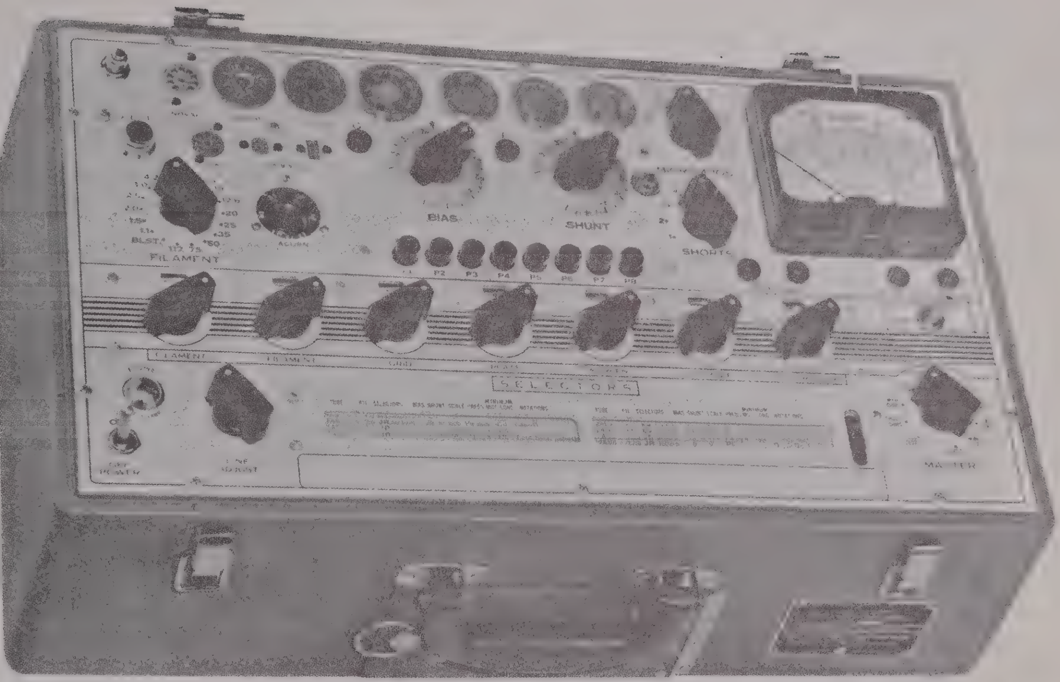
No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Over-all Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

TEST SET, ELECTRON TUBE TV-2/U

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Over-all Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Test Set, Electron Tube TV-2/U Including:	Aluminum	3F3952-2	8-1/2	17-3/4	15-1/2	45
1	Combination Case			8-1/2	17-3/4	15-1/2	
2	Instruction Book						
1	Printed Roll Chart						
5	Spare Fuse						
1	Spare Tube JAN-6X4		3300-234804500 2J6X4				
1	Spare Tube JAN-83		3300-235285000 2J83				
1	Spare Glow Lamp NE51						

TUBE TESTER TV-3A/U



and monitored by the Wright Air Development Center, ARDC - Carl L.
Frederick and Associates, Bethesda, Maryland - Multilithed in U.S.A.

UNCTIONAL DESCRIPTION:

A portable, general purpose, dynamic mutual conductance type tube tester designed o test and measure the mutual conductance values of receiving type electron tubes. multimeter section, using the same indicator, is also incorporated in the equipnent permitting measurement of AC and DC volts direct current, resistance, and apacitance.

This tube tester is designed for testing the following general classes of tubes: iodes, high vacuum and gas; Triodes, high vacuum and gas (thyratron), electron ay (tuning eye); Tetrodes, high vacuum and gas thyratron; Pentodes, beam power utput; Heptodes, pentagrid converters; Hexodes; Dual and multiple element tubes; ighthouse, acorn, subminiature. While most of these tubes are of the receiving ype, many are also used in other services such as transmitting, radar, sonar, etc.

Types of tests which this equipment can make are as follows: Line voltage test, hort test, noise test, rectifier emission test, mutual conductance, and gas test.

ELATIONSHIP TO OTHER EQUIPMENT:

The case and meter size of Tube Tester TV-3A/U is larger than that of Tube

(Continued)

	AIR FORCE	NAVY	ARMY
YPE CLASS.		Standard	
TOCK NOS.		F16-Q-305401-200	
ROCUREM'T INFO.:	Spec. MIL-T-15563C (SHIPS) 7 Nov. 52.		
ROCUREM'T COG.:	Navy	DESIGN COG.: Navy, BuShips	
.I.I.N.:		FUNCTIONAL CLASS: 10.2.7	

TUBE TESTER TV-3A/U

RELATIONSHIP TO OTHER EQUIPMENT: (Continued)

Tester TV-3/U. The method of selection of the Micromhos Range and the Signal Voltage is different on the two equipments.

ELECTROMECHANICAL DESCRIPTION:

The following tube sockets are provided: 4 contact, 5 contact, 6 contact, 7 contact, (combination large and small), 8 contact (octal), 8 contact (loctal), 7 contact miniature, 9 contact miniature, 7 contact acorn, 8 contact subminiature, 7 contact in-line subminiature.

Power Supply: 115 volts ±10%, AC, 50 to 1600 cycles per second, single phase, 45 watts at 60 cycles.

Ranges: Micromhos: 0 to 3000, 6000, 15,000, or 30,000 micromhos.
AC and DC Voltage: 0 to 20, 200, 500, or 1000 volts.
Sensitivity, All Ranges: 1000 ohms per volt.
Direct Current: 0 to 20 or 200 milliamperes.
Resistance: 0 to 1 or 100 megohms.
Capacitance: 0 to 5 or 50 microfarads.

Accuracy: Micromhos: ±10%.
DC Ranges: ±3% (10 to 25°C), ±5% (0 to 50°C).
AC Ranges: ±5% (10 to 25°C), ±6% (0 to 50°C).
Resistance: ±5% mid scale, at approximately 20°C.

MANUFACTURERS' OR CONTRACTORS' DATA:

Hickok Electrical Instrument Co., 10514 DuPont Avenue, Cleveland 2, Ohio.
Navy Contract NObsr-43282, 18 May 1949; NObsr-49238, 30 June 1950.

TUBE COMPLEMENT:

1 JAN-5Y3GT, 1 JAN-83.

REFERENCE DATA AND LITERATURE:

NAVSHIPS 91435 (Instruction Book).

SHIPPING DATA:

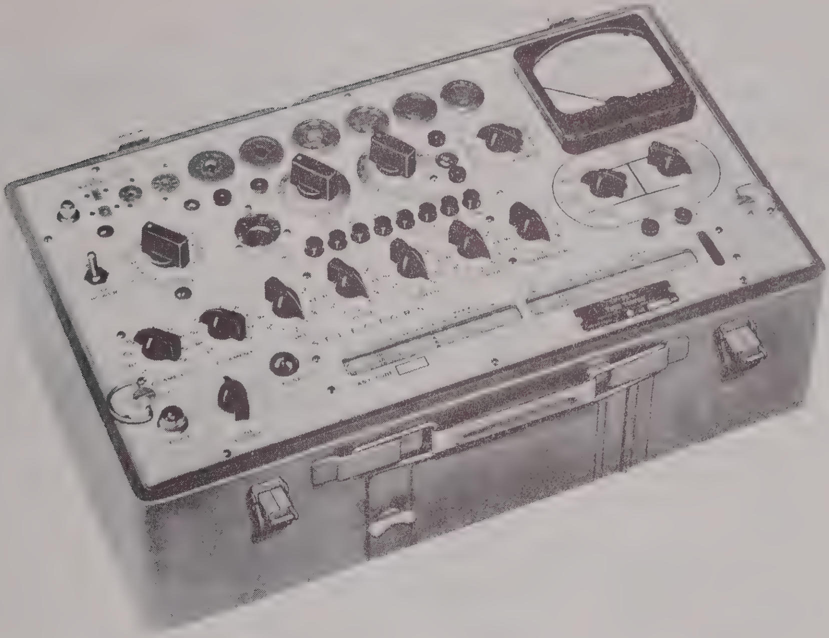
No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Over-all Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
1	Tube Tester TV-3A/U and Maintenance Repair Parts	5.3	13-1/2	29-1/2	23	90

TUBE TESTER TV-3A/U

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Over-all Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Tube Tester TV-3A/U	Aluminum	F16-Q-305401-200	6-7/8	18-3/4	10-7/8	32
1	Lead, Grid Plate		N17-L-64608-5801 3E8000-5				
1	Lead, Capacity Test		N17-L-64604-3492 3E8000-44				
1	Lead, Plate Connector		N17-L-63201-4677 3E8000-7				
1	Lead, Red Test Prod		N-17-L-63205-4185 3E8000-48.1				
1	Lead, Black Test Prod		N-17L-63205-4190 3E8000-48				
1	Lead, Grid Connector		N17-L-63201-7851 3E8000-10.5				
1	Pilot Lamp		8800-444163 G17-L-6297 2Z5952				
2	Fuse Lamps		8800-445300 G17-L-6686 6Z6806.14				
1	Neon Lamp		8800-470793 N17-L-6807 3F4056A/L2				
1	Instruction Book						

TUBE TESTER TV-3B/U



FUNCTIONAL DESCRIPTION:

A portable general purpose dynamic mutual conductance type tube tester designed to test and measure the mutual conductance values of receiving type electron tubes. A multimeter section, using the same indicator, is also incorporated in the equipment permitting measurement of AC and DC volts, direct current, resistance, and capacitance.

This tube tester is designed for testing the following general classes of tubes: (1) diodes, high vacuum and gas; (2) triodes, high vacuum and gas (thyratron), electron ray (tuning eye); (3) tetrodes, high vacuum and gas thyratron; (4) pentodes, beam power output; (5) heptodes, pentagrid converters; (6) hexodes; (7) dual and multiple element tubes; and (8) lighthouse, acorn, subminiature. While most of these tubes are of the receiving type, many are also used in other services such as transmitting, radar, sonar, etc.

Types of tests which this equipment can make are as follows: Line voltage test, short test, noise test, rectifier emission test, mutual conductance, and gas test.

RELATIONSHIP TO OTHER EQUIPMENT:

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.			
PROCUREM'T INFO.: Spec. MIL-T-15563A (Ships)			
PROCUREM'T COG.: USN	DESIGN COG.: USN, BuShips		
F.I.I.N.:	FUNCTIONAL CLASS. NO.: 10.2.7		
- Electronics Test Equipment -			TV-3B/U

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U.S.A.

TUBE TESTER TV-3B/U

ELECTROMECHANICAL DESCRIPTION:

The following tube sockets are provided: 4 contact, 5 contact, 6 contact, 7 contac (combination large and small), 8 contact (octal), 8 contact (loctal), 7 contac miniature, 9 contact miniature, 7 contact acorn, 8 contact subminiature, 7 con tact in-line subminiature.

Power Supply: 115 volts ±10%, AC, 50 to 1000 cycles per second, single phase, 5 watts at 115 volts, 60 cycles per second.

Ranges: Micromhos: 0 to 3000, 6000, 15,000, or 30,000 micromhos.
AC and DC Voltage: 0 to 4, 10, 40, 100, 400, or 1000 volts.
Sensitivity (All Ranges): 1000 ohms per volt.
Direct Current: 0 to 1, 10, 40, 100, or 400 milliamperes.
Resistance: 0 to 0.0001, 0.01, 0.1, 1, 10, or 100 megohms.
Capacitance: 0 to 0.1, 1, 10, or 20 microfarads.

Accuracy:
Micromhos: ±10%.
DC Ranges: ±3% (10°C. to 25°C.), ±5% (0°C. to 50°C.).
AC Ranges: ±5% (10°C. to 25°C.), ±6% (0°C. to 50°C.).
Resistance: ±5% mid scale, at approximately 20°C.

MANUFACTURERS OR CONTRACTORS' DATA:

Hickok Electrical Instrument Company, 10514 DuPont Avenue, Cleveland 2, Ohi
Style Nr. 901-132.

TUBE COMPLEMENT:

1 JAN-5Y3GT, 1 JAN-83.

REFERENCE DATA AND LITERATURE:

SHIPPING DATA:

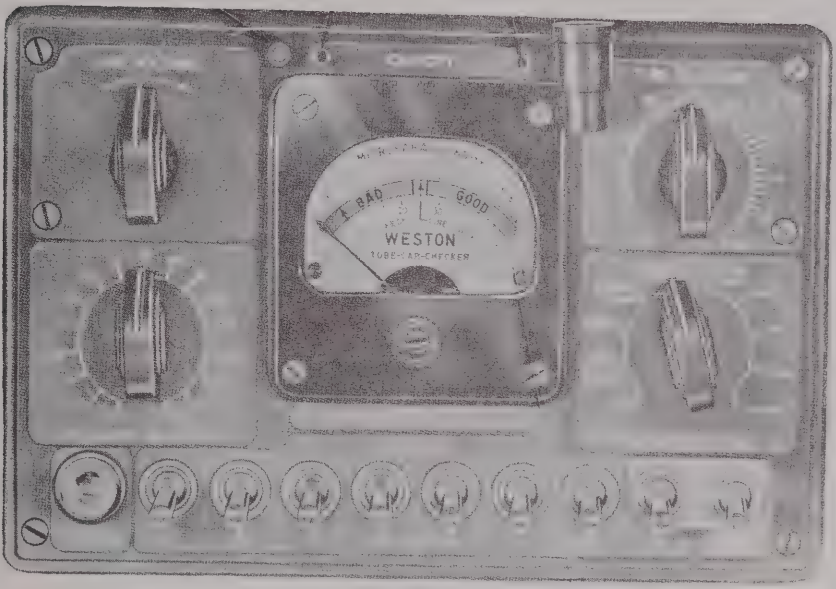
No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
1	Tube Tester TV-3B/U and Maintenance Repair Parts	5.3	13-1/2	29-1/2	23	90

TUBE TESTER TV-3B/U

QUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Tube Tester TV-3B/U	Aluminum		6-7/8	18-3/4	10-7/8	32
1	Lead, Grid and Plate		N17-L-64608-5801 3E8000-5				
1	Lead, Capacity Test		N17-L-64604-3492 3E8000-44				
1	Lead, Plate Connector		N17-L-63201-4677 3E8000-7				
1	Lead, Red Test Prod		N17-L-63205-4185 3E8000-48. 1				
1	Lead, Black Test Prod		N17-L-63205-4190 3E8000-48				
1	Lead, Grid Connector		N17-L-63201-7851 3E8000-10. 5				
1	Pilot Lamp		8800-444163 G17-L-6297 2Z5952				
2	Fuse Lamp		8800-445300 G17-L-6686 6Z6806. 14				
1	Neon Lamp		8800-470793 N17-L-6807 3F4056A/L2				
1	Instruction Book						

TUBE TESTER TV-4A/U



FUNCTIONAL DESCRIPTION:

A portable, general purpose unit used to test receiving tubes for filament con-inuity, emission, and shorted or open elements. The tester is also used to meas-re capacitance when operated from a 60 cycles per second power supply. The unit an also be used as an AC voltage source and to indicate the AC value of resistance, nductance, and impedance. Results are indicated on a calibrated meter.

RELATIONSHIP TO OTHER EQUIPMENT:

The TV-4A/U is a major component of Test-Tool set AN/USM-3A.

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The tube tester consists basically of an indicating device, switching circuits, a socket panel, and a power transformer. The indicating device is essentially a DC milliammeter operating in conjunction with an electron tube rectifier for the LINE CHECK meter reading. The meter functions with a full-wave copper oxide rectifier for capacitance readings and is used

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.			

PROCUREM'T INFO.:

PROCUREM'T COG.: Navy DESIGN COG.: Navy, BuShips

F.I.I.N.: FUNCTIONAL CLASS. NO.: 10.2.7

- Electronics Test Equipment - TV-4A/U

TUBE TESTER TV-4A/U

ELECTROMECHANICAL DESCRIPTION: (Continued)

directly as a DC milliammeter for tube-test readings. The socket panel is a separate subassembly and provides sockets for testing all tubes listed in the Tube Data Index. The power transformer supplies all potentials for the tube-test functions as well as for the capacitance meter ranges. The unit will not indicate a gassy condition in a tube unless the condition affects emission.

Power Supply: 105 to 125 volts, AC, 50 to 1600 cycles per second, single-phase, 25 watts.

Meter Movement: 100 microamps.

Meter Resistance: 1238 ohms.

Filament Range: 1.1 to 117 volts, AC.

Capacitance Range: 0.001 to 100 microfarads.

MANUFACTURERS' OR CONTRACTORS' DATA:

Radio Frequency Laboratories, Inc., Boonton 7, New Jersey; Contract No. NObsr 52269.

TUBE COMPLEMENT:

1 3A4.

REFERENCE DATA AND LITERATURE:

Catalog of Navy Material.
Navships 900, 155, Vol II.
Navships 91688.
SC Form 567.

EQUIPMENT SUPPLIED:

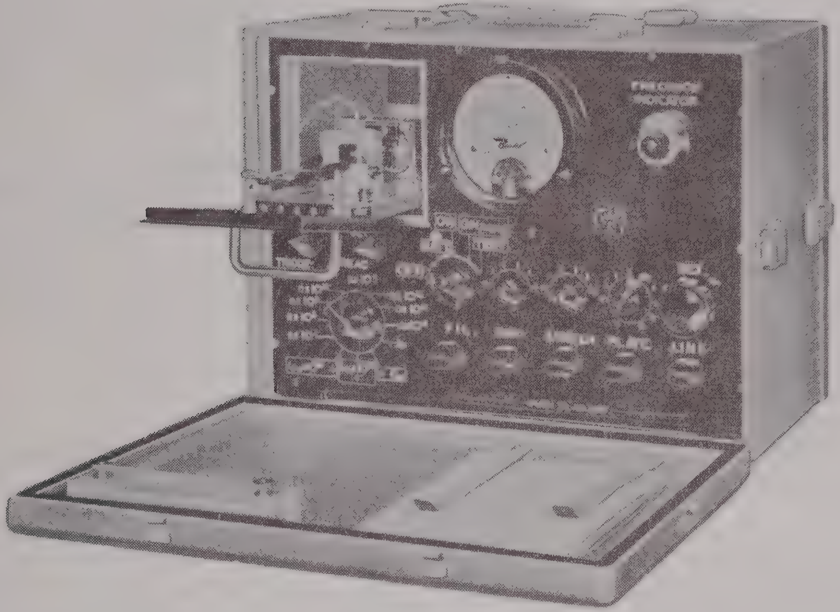
Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Tube Tester TV-4A/U	metal		5-13/16	8-1/4	5-1/2	9

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
	Tube Tester TV-4A/U					

ELECTRON TUBE TEST SET TV-6(XE)/U
(TEST SET, ELECTRON TUBE, TV-6(XE)/U)

and monitored by the Wright Air Development Center, ARDC - Carl L. Frederick and Associates, Bethesda, Maryland - Multilithed in U.S.A.



FUNCTIONAL DESCRIPTION:

A portable, general purpose, ruggedized, combination test set designed to measure high resistances and check subminiature electrometer tubes employed in radiac and other equipment. The tester measures grid current, plate current, transconductance, and leakage, as well as grid and plate voltages, of electrometer tubes. It is intended for field and depot testing.

RELATIONSHIP TO OTHER EQUIPMENT:

Similar to Bendix Model 602.

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: Basically, the circuit consists of a tube tester adapted for subminiature electrometer tubes, and a high-megohm resistance bridge.

Power Supply: One 1.5 volt Battery BA-30 and two 7.5 volt Batteries BA-34.

Voltage Ranges:

Plate: 0 to 7.5 volts.

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.	Standard		
STOCK NOS.			

PROCUREM'T INFO.:

PROCUREM'T COG.: Army   DESIGN COG.: Army, ESL

F.I.I.N.:   FUNCTIONAL CLASS: 10.2.7

ELECTRON TUBE TEST SET TV-6(XE)/U
(TEST SET, ELECTRON TUBE, TV-6(XE)/U)

ELECTROMECHANICAL DESCRIPTION: (Continued)

Screen: 0 to 15 volts.
Grid: 0 to 7.5 volts.
Filament: 0.2 to 1.5 volts.

Current Ranges:

Plate: 0 to 100 microamperes; 0 to 1000 microamperes.
Grid: 10^{-12} to 10^{-13} amperes; 10^{-13} to 10^{-14} amperes.

Resistance Ranges: 0 to 10^{15} ohms in 9 ranges: 0 to 10^{7}, 10^{8}, 10^{9}, 10^{10}, 10^{11}, 10^{12}, 10^{13}, 10^{14}, and 10^{15}.

Transconductance Range: 0 to 1000 micromhos.

Accuracy (full scale):

Voltage: ±5%.
Current: ±5%.
Transconductance: ±5%.
Resistance: ±5% from 10^{12} to 10^{15} ohms, maximum, and ±1% from 10^{7} to 10^{12} ohms, maximum.

MANUFACTURERS' OR CONTRACTORS' DATA:

Bendix Aviation Corporation, Cincinnati Division, Cincinnati, Ohio; Army Contract No. DA 36-039-ac-22211; Army Order No. 3577-PHILA-52-04; Approximate Cost per Unit, $425.00.

TUBE COMPLEMENT:

1 RTMA-CK571.

REFERENCE DATA AND LITERATURE:

SHIPPING DATA:

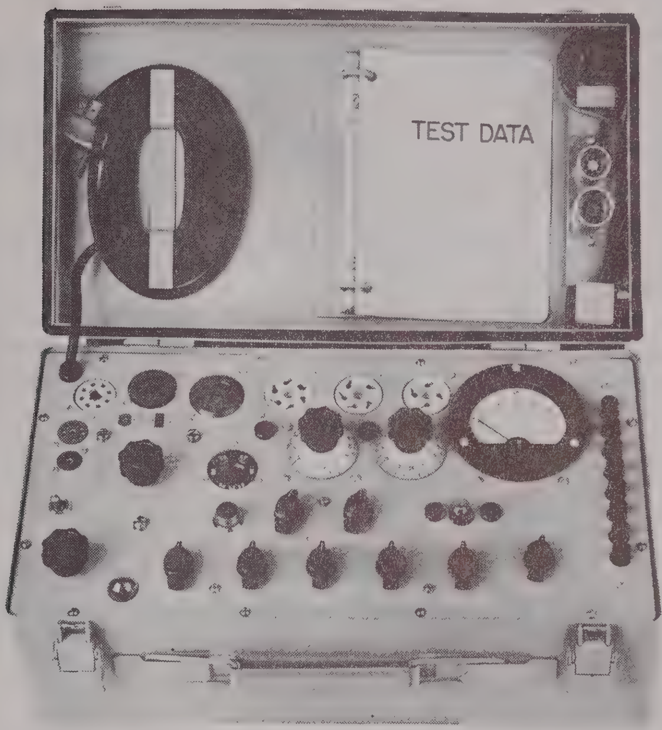
No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Over-all Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

ELECTRON TUBE TEST SET TV-6(XE)/U
(TEST SET, ELECTRON TUBE, TV-6(XE)/U)

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Over-all Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Electron Tube Test Set TV-6(XE)/U	Steel		11-5/8	15-7/8	10-1/2	40
1	Tube Chart						

TEST SET, ELECTRON TUBE TV-7/U



UNCTIONAL DESCRIPTION:

A portable, general purpose self-contained instrument designed to measure dy-
amic mutual conductance qualities of commercial and JAN type electron tubes of
e receiving and low power transmitting class. It can detect presence of gas with-
tubes, detect and measure internal shorts within tubes, check emission of recti-
er tubes, detect intermittent contacts between tube electrodes not detected under
ormal short tests, and test pilot lamps having miniature bases. This instrument
also capable of testing miniature and sub-miniature tubes for the above charac-
eristics. This tester is used in organizational and field testing and maintenance.
dication is provided by a 3-1/2 inch round, 200 microampere DC meter, sealed
d ruggedized, and on a neon lamp.

ELATIONSHIP TO OTHER EQUIPMENT:

	AIR FORCE	NAVY	ARMY
YPE CLASS.	Standard		
TOCK NOS.	7CAC-801318-5725		
PROCUREM'T INFO.:	Spec. MIL-T-11754(SigC) dated 16 February 1952.		
PROCUREM'T COG.:	Army	DESIGN COG.:	Army, ESL
.I.I.N.:		FUNCTIONAL CLASS. NO.:	10.2.7
	- Electronics Test Equipment -		TV-7/U

project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

TEST SET, ELECTRON TUBE TV-7/U

ELECTROMECHANICAL DESCRIPTION:

Power Supply: 115 volts ±10%, AC, single phase, 50 to 1000 cycles per second, 5 watts, maximum, at 115 volts, 60 cycles per second.

Mutual-Conductance Range: 0 to 3000, 6000, 15,000, and 30,000 micromhos, un calibrated.

Meter Dial Indicating Range: 120 scale divisions numbered in multiples of 20.

Filament Range: 1.1, 1.5, 2, 2.5, 3, 4.3, 5, 6.3, 7.5, 10, 12.6, 20, 25, 35, 50, 75 117 volts.

Gas Check Sensitivity: 1 microampere or more of gas current within the tube unde test is indicated on the tester.

Short Check Indication: Any leakage or shorting between tube elements is indicate on a neon lamp when less than 100 volts, AC, peak, is placed across them.

Accuracy: Within ±10% of indicated mutual conductance under all conditions of hu midity, temperature, voltage, or frequency.

Temperature Range: -4° F. to +125° F., operating; -80° F. to +160° F., storage for 72 hours continuous exposure.

MANUFACTURERS' OR CONTRACTORS' DATA:

Hickok Electrical Instrument Company, Cleveland, Ohio; Contract No. DA-36 039-sc-18521.

TUBE COMPLEMENT:

1 JAN-6X4, 1 JAN-3B22.

REFERENCE DATA AND LITERATURE:

Manufacturer's Instruction Book.

SHIPPING DATA:

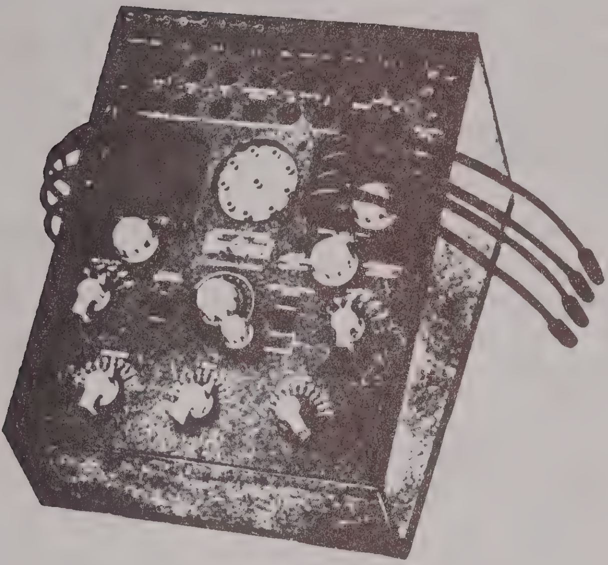
No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Over-all Dimensions (inches)			Weigh Packe (Lbs.
			H	W	D	
1	Test Set, Electron Tube TV-7/U (Domestic Package Water Resistant Carton).	1.51	9-1/2	23	12	35

TEST SET, ELECTRON TUBE TV-7/U

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Over-all Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Test Set, Electron Tube TV-7/U Including:	Metal	7CAC-801318-5725	5-3/4	15-1/2	8-1/2	25
1	Combination Case	Metal		5-3/4	15-1/2	8-1/2	
1	Set Test Leads			13 long plus termi-nations			
1	Set Test Data Cords						
1	Instruction Book						

BRIDGE, VACUUM TUBE
Type No. 1661-A
(General Radio Company)



UNCTIONAL DESCRIPTION:

A portable, general purpose equipment used to measure the low frequency dy-
amic coefficients of low-power transmitting tubes, receiving tubes, and tran-
istors over a wide range of values under a variety of operating conditions. In-
ependent, direct-reading measurements of voltage-amplification factor, resist-
nce, and transconductance can be made on vacuum tubes. Transistor applica-
ions, within the range and sensitivity of the bridge, include direct measurement
f short-circuit conductance parameters. Some open-circuit parameters can be
easured if careful external shielding is provided where required. The unit af-
ords a means of studying tubes and transistors used in unconventional or special-
zed circuits.

ELATIONSHIP TO OTHER EQUIPMENT:

The bridge requires a null detector and a 270 to 400-or 1000-cycles per second
scillator.

	AIR FORCE	NAVY	ARMY
TYPE CLASS.		Limited Standard	
STOCK NOS.			

PROCUREM'T INFO.:
PROCUREM'T COG.: Navy DESIGN COG.: Commercial
F.I.I.N.: FUNCTIONAL CLASS. NO.: 10.2.7

BRIDGE, VACUUM TUBE
Type No. 1661-A
(General Radio Company)

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The bridge makes use of the AC null methods of measurement in which phase shift and capacitance errors have been considered, so that the operating range of the bridge may be as wide as possible. Each of the three coefficients is obtained in terms of the ratio of two alternating test voltages. A third voltage is employed in the capacitance balancing circuit, but its value does not enter into the results. The arrangement of the control circuit makes it possible to measure the parameters referred to any pair of electrodes. Two internal resistance standards permit operation at a bridge ratio that yields improved sensitivity at the resistance and transconductance extremes. Socket adapters and sockets that can be mounted on the universal adapter are furnished for subminiature tubes and transistors. Batteries or suitable power supplies are necessary for providing the various voltages required by the device under test.

Power Supply: Determined by device under test.

Range Amplification Factor: 0.001 to 10,000.

Dynamic Internal Plate Resistance: 50 to 20 megohms.

Transconductance: 0.02 to 50,000 micromhos.

Accuracy of Dynamic Internal Plate Resistance: ±2% from 1000 to 1 megohm; the error increases at other ranges.

Plate Current: 150 milliamps, maximum.

Plate Voltage: 1500 volts, maximum.

MANUFACTURERS' OR CONTRACTORS' DATA:

General Radio Company, Baker Avenue, West Concord, Massachusetts; Approximate Cost per Unit, $1,100.00.

TUBE COMPLEMENT:

REFERENCE DATA AND LITERATURE:

Manufacturer's Catalog Q.

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weigh Packe (Lbs.
			H	W	D	
	Bridge, Vacuum Tube General Radio 1661-A					

BRIDGE, VACUUM TUBE

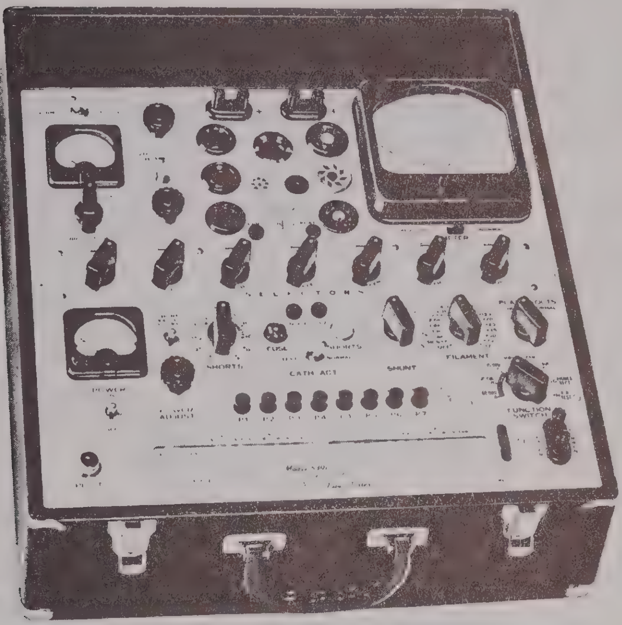
Type No. 1661-A

(General Radio Company)

EQUIPMENT SUPPLIED:

Quant. Per Eq pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Bridge, Vacuum Tube, General Radio, 1661-A	wood					40
1	Storage Case for Adaptors and Leads	wood					
	Adaptors Sockets Plug-in Leads Shielded Patch Cords						

TUBE TESTER
MODEL 539B
(Hickok Electrical Instrument Company)



FUNCTIONAL DESCRIPTION:

A portable, general purpose tester designed to measure the operating condition of receiving and low power transmitting electron tubes. The tester is used to measure tube mutual conductance, check for internal shorts, detect and measure leakage between tube elements, measure heater current, measure tube gas content, indicate tube noise, and measure plate current of electron tubes. The tester may be used to measure the gas current at minimum and maximum voltage, and indicate striking and regulating voltages of gas regulating electron tubes. Tests may be performed on selenium rectifiers and germanium diodes.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Power Supply: 110 to 125 volts, AC, 50 to 60 cycles per second, 40 watts.
Micromho Range: 600, 3000, 6000, 15,000, 30,000, and 60,000 micromhos.
AC Signal Supplied: 0.25, 0.5, 1.0, or 2.5 volts.

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.			
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.2.7	
			Hickok 539B

TUBE TESTER
MODEL 539B
(Hickok Electrical Instrument Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)

DC Leakage Test: To 50 megohms.
VR Voltage: 0 to 200 volts, DC.
VR Current Indicator: 0 to 100 milliamps, DC.
Bias Range: 0 to 10 and 0 to 50 volts, DC.

MANUFACTURERS' OR CONTRACTORS' DATA:

Hickok Electrical Instrument Company, 10514 Dupont Avenue, Cleveland 8 Ohio; Approximate Cost per Unit, $239.00.

TUBE COMPLEMENT:

1 83, 1 5Y3GT.

REFERENCE DATA AND LITERATURE:

Manufacturers' Operating Instruction Manual.

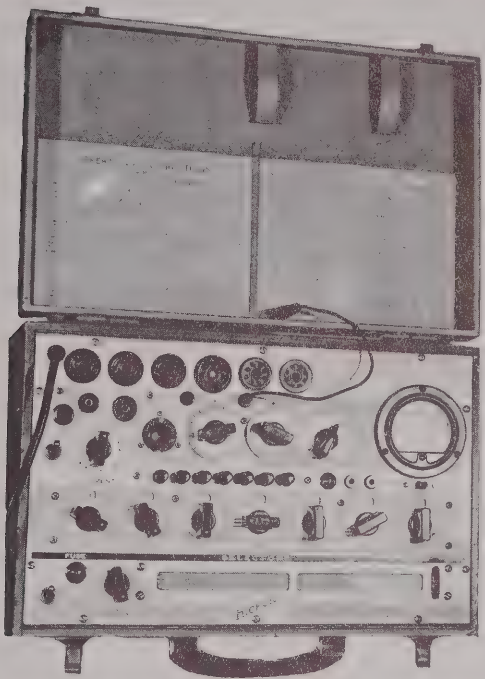
EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weigh (Lbs.
				H	W	D	
1	Tube Tester Hickok 539B	wood		7-1/2	16-3/4	18-3/8	28

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weigh Packe (Lbs.
			H	W	D	
	Tube Tester, Hickok 539B					

TUBE TESTER
MODEL 547A
(Hickok Electrical Instrument Company)



UNCTIONAL DESCRIPTION:

A portable, general purpose, dynamic mutual conductance tube tester designed r testing receiving, low-power transmitter, 4 pin, 5 pin, 6 pin, 7 pin standard, ctal, loktal, acorn, noval, 7 pin miniature, circular subminiature, and in line ubminiature electron tubes. Tests for open filament, shorts, noise, gas, mutual onductance, cathode emission, and continuity may be performed. Results are btained from a meter and neon lamp located on the front panel. A radio receiver required when making the noise test.

ELATIONSHIP TO OTHER EQUIPMENT:

LECTROMECHANICAL DESCRIPTION:

ircuit Information: Data for selecting the proper position for the tester controls is obtained by means of a roll type chart. The controls, tube sockets, jacks, indicators and data chart are located on the front panel. A control for adjusting the line voltage is provided.

(Continued)

	AIR FORCE	NAVY	ARMY
YPE CLASS.			
TOCK NOS.			

ROCUREM'T INFO.:

ROCUREM'T COG.: DESIGN COG.: Commercial

.L.I.N.: FUNCTIONAL CLASS. NO.: 10.2.7

TUBE TESTER
MODEL 547A
(Hickok Electrical Instrument Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)

Power Supply: 1 10 to 125 volts, AC, 50 to 400 cycles per second.
Mutual Conductance Signal Voltage: Low 1 volt AC; High 5 volts AC.
Mutual Conductance Measurement Range: 0 to 15, 000 micromhos in 5 ranges.
Continuity Measurement Range: 0 to 200, 000 ohms.
Filament Voltage: 0, 1. 5, 2. 0, 2. 5, 6. 3, 7. 5, 10. 0 and 12. 6 volts, AC.

MANUFACTURERS' OR CONTRACTORS' DATA:

Hickok Electrical Instrument Company, 10514 DuPont Avenue, Cleveland 8, Ohio.

TUBE COMPLEMENT:

1 5Y3, 1 83.

REFERENCE DATA AND LITERATURE:

Manual of Operating Instructions.

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
	Tube Tester, Hickok 547A					

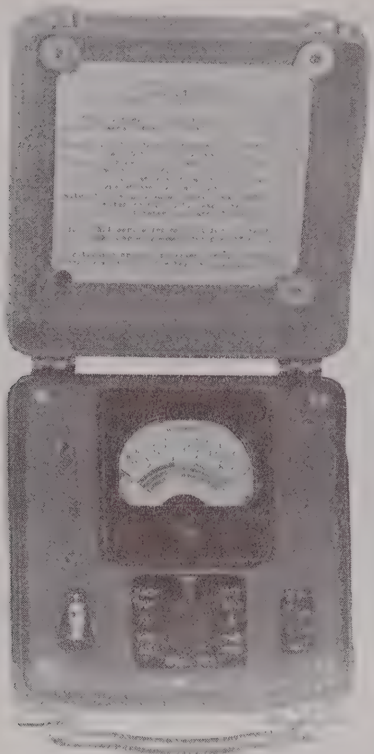
TUBE TESTER
MODEL 547A
(Hickok Electrical Instrument Company)

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Tube Tester Hickok 547A Including:						
1	Instruction Booklet						
1	Grid Lead with Clip						
1	"Lighthouse" Grid Connector						
1	Extra Lead with Clip						

CRYSTAL RECTIFIER TEST SET TS-268/U
(TEST SET, CRYSTAL, TS-268/U)

and monitored by the Wright Air Development Center, ARDC - Carl L.
Frederick and Associates, Bethesda, Maryland - Multilithed in U.S.A.



FUNCTIONAL DESCRIPTION:

A portable, self-contained test set designed to make speedy, qualitative tests on specific types of high-frequency crystal rectifiers. It measures the forward and the backward resistance of the crystal under test in order to obtain a ratio which indicates quality. The condition of the crystal rectifier can also be determined by measurement of backward current flow.

All controls necessary for operation are readily accessible on the panel of the equipment.

RELATIONSHIP TO OTHER EQUIPMENT:

Circuit is similar to MIT Type TMN-10RL.

Later models of TS-268/U series have test data for additional crystal detectors not covered by TS-268/U.

ELECTROMECHANICAL DESCRIPTION:

Power Supply: One 1.5 volt Battery BA-30.

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.		Sub-Standard	Standard
STOCK NOS.	7CAC-801318-552	ASO-R16-AN-TS-268/U	3F4325-268
PROCUREM'T INFO.:			
PROCUREM'T COG.: Army		DESIGN COG.: Army, ESL	
F.I.I.N.:		FUNCTIONAL CLASS· 10.2.8	

CRYSTAL RECTIFIER TEST SET TS-268/U
(TEST SET, CRYSTAL, TS-268/U)

ELECTROMECHANICAL DESCRIPTION:

Accuracy: 2%.

Temperature Range: -4° to +120° F.

Type Crystals Checked: JAN 1N21, JAN 1N21A, JAN 1N21B, JAN 1N23, JAN 1N23A, JAN 1N23B, and JAN 1N25.

Resistance Range: 0 to 10,000 ohms.

Current Range: 0 to 1 milliampere DC.

Indication Data: A 0-1 milliampere meter is used to indicate the resistance, front or back of the crystal. This meter is calibrated directly in kilohms and in milliamperes. The conductance is indicated on the meter as good or poor.

MANUFACTURERS' OR CONTRACTORS' DATA:

Radio Frequency Laboratories, Inc., Boonton, New Jersey; Approximate Cost per Unit, $175.00. Contract No. NXsr-84999 and LL-NXsr-93897, 12 December 1944 and 17 April 1945.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 16-35TS268-2 (Maintenance Instructions).
TO 16-35TS268-5 (TM 11-215) (Instruction Book).
TO 16-35TS268-15 (TM 11-1242) (Operation, Maintenance and Repair Instructions).

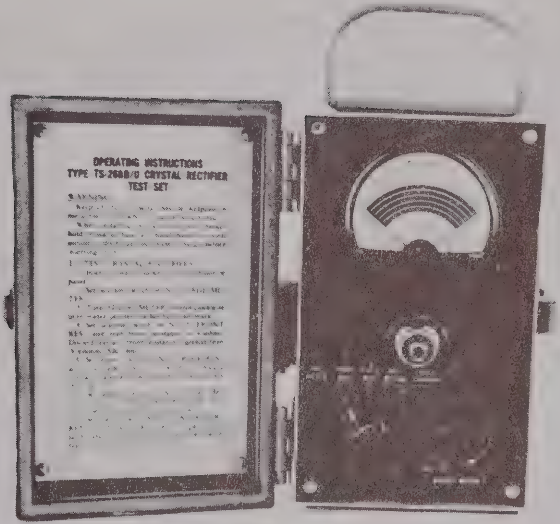
EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Over-all Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Crystal Rectifier Test Set TS-268/U (Complete).	Aluminum	7CAC-801318-552 R16-AN-TS-268/U 3F4325-268	3	6	7	3.0

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Over-all Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
1	Crystal Rectifier Test Set, TS-268/U (Domestic Packed).	0.094	3-1/4	6-1/2	7-3/4	4.0

CRYSTAL RECTIFIER TEST SET TS-268B/U
(TEST SET, CRYSTAL TS-268B/U)



UNCTIONAL DESCRIPTION:

A portable, self-contained test set designed to make speedy, qualitative tests on pecific types of high-frequency crystal rectifiers. It measures the forward and the ackward resistance of the crystal under test in order to obtain a ratio which indi-ates quality. The condition of the crystal rectifier can also be determined by meas-rement of backward current flow.

All controls necessary for operation are readily accessible on the panel of the quipment. The panel also incorporates a meter which is calibrated in kilohms for esistance measurements and in milliamperes for current readings. The current cale is provided with colored sections which facilitate acceptance or rejection of rystals according to the type being tested.

ELATIONSHIP TO OTHER EQUIPMENT:

LECTROMECHANICAL DESCRIPTION:

ower Supply: One 1.5 volt Battery (BA-30).

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.	Sub-Standard	Sub-Standard	Standard
STOCK NOS.	7CAC-801318-548		3F4325-268B

PROCUREM'T INFO.: USAF Exhibit No. WLENG-121

PROCUREM'T COG.: Army DESIGN COG.: Army, ESL

F.I.I.N.: FUNCTIONAL CLASS: 10.2.8

and monitored by the Wright Air Development Center, ARDC - Carl L.
Frederick and Associates, Bethesda, Maryland - Multilithed in U.S.A.

CRYSTAL RECTIFIER TEST SET TS-268B/U
(TEST SET, CRYSTAL TS-268B/U)

ELECTROMECHANICAL DESCRIPTION: (Continued)

Basic Meter Accuracy: ±2% of full scale.
Temperature Range: -4° to +120° F.
Type Crystals Checked: 1N21, 1N21A, 1N21B, 1N23, 1N23A, and 1N23B.
Resistance Range: 0 to 10, 000 ohms.
Current Range: 0 to 1 milliampere DC.

MANUFACTURERS' OR CONTRACTORS' DATA:

Marion Electrical Instruments Company, Manchester, New Hampshire; Orde
No. 28-099-45-343; Approximate Cost per Unit, $38. 08, 3 February 1954.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO16-35TS268-15 (TM11-1242) (Operation, Maintenance and Repair Instructions
TO16-55-182 (Spare Parts List).

EQUIPMENT SUPPLIED:

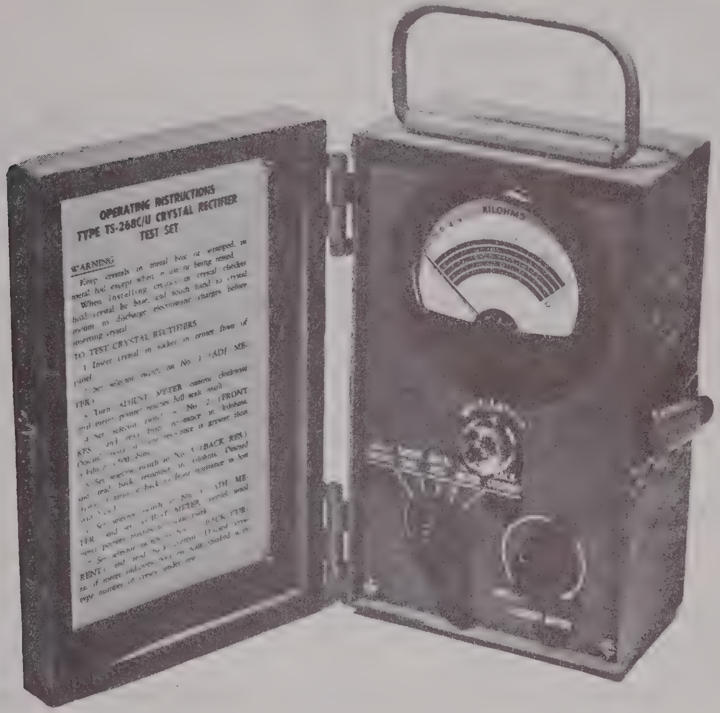
Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Over-all Dimensions (inches)			Weigh (Lbs.
				H	W	D	
1	Crystal Rectifier Test Set TS-268B/U (Complete)		7CAC-801318-548 3F4325-268B	7-1/2	5-3/4	4-3/8	3. 5

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Over-all Dimensions (inches)			Weigh Packe (Lbs.
			H	W	D	
1	Crystal Rectifier Test Set, TS-268B/U. (Shelf Package).	0. 10	8	7	5	5. 1

CRYSTAL RECTIFIER TEST SET TS-268C/U
(TEST SET, CRYSTAL TS-268C/U)

This research was supported by the USAF under Contract AF 33(038)12897 and monitored by the Wright Air Development Center, ARDC - Carl L. Frederick and Associates, Bethesda, Maryland - Multilithed in U.S.A.



FUNCTIONAL DESCRIPTION:

A portable, self-contained test set designed to make speedy, qualitative tests on specific types of high-frequency crystal rectifiers. It measures the forward and the backward resistance of the crystal under test in order to obtain a ratio which indicates quality. The condition of the crystal rectifier can also be determined by measurement of backward current flow.

All controls necessary for operation are readily accessible on the panel of the equipment. The panel also incorporates a meter which is calibrated in kilohms for resistance measurements and in milliamperes for current readings. The current scale is provided with colored sections which facilitate acceptance or rejection of crystals according to the type being tested.

RELATIONSHIP TO OTHER EQUIPMENT:

Similar to TS-268/U, TS-268A/U, and TS-268/BU except for water tight battery container and case cover.

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.	Sub-Standard	Standard	Standard
STOCK NOS.	7CAC-801318-562	ASO-R16-AN-TS-268C/U	3F4325-268C
PROCUREM'T INFO.:	USAF Exhibit No. WLENG-121A		
PROCUREM'T COG.:	Army	DESIGN COG.: Army, ESL	
F.I.I.N.:		FUNCTIONAL CLASS: 10.2.8	
	- Electronics Test Equipment -		TS-268C/U

CRYSTAL RECTIFIER TEST SET TS-268C/U
(TEST SET, CRYSTAL TS-268C/U)

ELECTROMECHANICAL DESCRIPTION:
Power Supply: One 1.5 volt battery (BA-30).
Basic Meter Accuracy: ±2% of full scale.
Temperature Range: -4° to +120° F.
Type Crystals Checked: 1N21, 1N21A, 1N21B, 1N23, 1N23A, 1N23B, and 1N25.
Resistance Range: 0 to 10,000 ohms.
Current Range: 0 to 1 milliampere DC.

MANUFACTURERS' OR CONTRACTORS' DATA:

Munston Manufacturing and Service Inc., New York, New York; Contract No. W-33-038-ac-17893; Approximate Cost per Unit, $26.00.

Transmitter Equipment Corporation, Order No. 21790-P-50; Approximate Cost per Unit, $32.00.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 16-55-388 (Spare Parts List).

TO 16-35TS268-15 (TM 11-1242) (Operation, Maintenance and Repair Instructions).

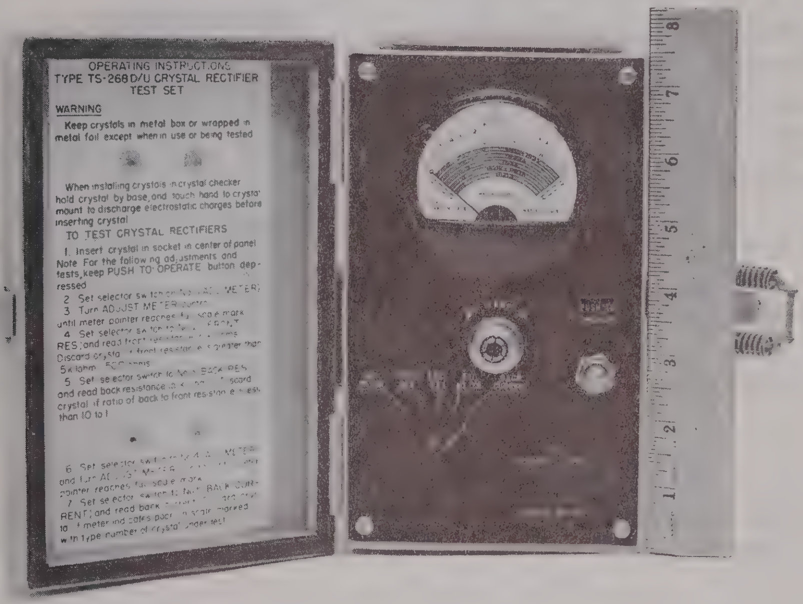
EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Over-all Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Crystal Test Set, TS-268C/U (Complete)	Metal	7CAC-801318-562 R16-AN-TS-268C/U 3F4325-268C	3.5	8	5.5	3.4

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Over-all Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
1	Crystal Rectifier Test Set, TS-268C/U. (Water resistant carton).	0.31	6	11	8	5.6

CRYSTAL RECTIFIER TEST SET TS-268D/U
(TEST SET, CRYSTAL, TS-268D/U)


OPERATING INSTRUCTIONS
TYPE TS-268D/U CRYSTAL RECTIFIER TEST SET
WARNING
Keep crystals in metal box or wrapped in metal foil except when in use or being tested
When installing crystals in crystal checker hold crystal by base, and touch hand to crystal mount to discharge electrostatic charges before inserting crystal
TO TEST CRYSTAL RECTIFIERS
1. Insert crystal in socket in center of panel
Note For the following adjustments and tests, keep PUSH TO OPERATE button depressed
8
7
6
5
4
3
2
1

UNCTIONAL DESCRIPTION:

A portable, self-contained test set designed to make rapid, qualitative tests on pecific types of radio frequency crystal rectifiers. It measures the forward and he backward resistance of the crystal under test in order to obtain a ratio which ndicates quality. The condition of the crystal rectifier can also be determined by neasurement of backward current flow.

All controls necessary for operation are readily accessible on the panel of the quipment. The panel also incorporates a meter which is calibrated in kilohms for esistance measurements and in milliamperes for current readings. The current cale is provided with colored sections which facilitate acceptance or rejection of rystals according to the type being tested.

ELATIONSHIP TO OTHER EQUIPMENT:

Performs similar functions to the previous models, but differs in appearance, peration, and maintenance parts.

(Continued)

	AIR FORCE	NAVY	ARMY
YPE CLASS.	Standard		
TOCK NOS.	7CAC-801318-5478	ASO-R16-AN-TS-268D/U	3F4325-268D
ROCUREM'T INFO.:	USAF Exhibit No. WLENG-121A; Spec. MIL-C-10731(SigC)		
ROCUREM'T COG.:	Army	DESIGN COG.: Army, ESL	
.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.2.8	

project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

CRYSTAL RECTIFIER TEST SET TS-268D/U
(TEST SET, CRYSTAL, TS-268D/U)

ELECTROMECHANICAL DESCRIPTION: (Continued)

Power Supply: 1.5 volts supplied by one Battery BA-30 (1.5 volts).
Resistance Range: 0 to 10,000 ohms.
Current Range: 0 to 1 milliampere, DC.
Basic Meter Resistance: 100 ohms.
Basic Meter Accuracy: ±2% of full scale.
Temperature Range: -4°F. to +120°F.
Type Crystals Checked: 1N21, 1N21A, 1N21B, 1N23, 1N23A, 1N23B, and **1N25.**

MANUFACTURERS' OR CONTRACTORS' DATA:

Network Manufacturing Corporation, Bayonne, New Jersey; Type J-105; SigC
Order 22410-PH-51-04-NY.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

33A1-12-46-1 (TM 11-1242) (Operation, Maintenance, and **Repair Instructions**)
33A1-12-46-14 (Spare Parts List).

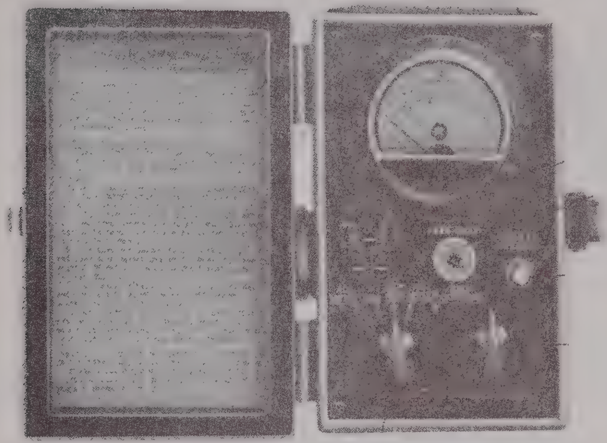
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weigh Packe (Lbs.
			H	W	D	
1	Crystal Rectifier Test Set TS-268D/U (Water Resistant Carton)	0.32	6-1/2	10-1/2	8	8

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weigh (Lbs.
				H	W	D	
1	Crystal Test Set TS-268D/U (Complete)	Aluminum	7CAC-801318-5478 R16-AN-TS-268D/U 3F4325-268D	3-1/2	8	5-1/2	4

CRYSTAL RECTIFIER TEST SET TS-268E/U



UNCTIONAL DESCRIPTION:

A portable self-contained test set designed to make rapid qualitative tests on pecific types of radio frequency crystal rectifiers. It measures the forward and e backward resistance of the crystal under test in order to obtain a ratio which ndicates quality. The condition of the crystal rectifier can also be determined by easurement of backward current flow. Maximum allowable current values are sted in the cover of the test set.

All controls necessary for operation are readily accessible on the panel of the quipment. The panel also incorporates a meter which is calibrated in kilohms for esistance measurements and in milliamperes for current readings.

ELATIONSHIP TO OTHER EQUIPMENT:

Similar to TS-268D/U except that the "E" has two crystal holders and no colored cales for acceptance or rejection of crystals.

LECTROMECHANICAL DESCRIPTION:

ower Supply: 1.5 volts supplied by one Battery BA-30 (1.5 volts).
esistance Range: 0 to 10,000 ohms.
urrent Range: 0 to 1 milliampere, DC.
asic Meter Resistance: 100 ohms.

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-801318-56365	ASO-R16-AN-TS-268E/U	3F4325-268E
PROCUREM'T INFO.: USAF Exhibit No. WLENG-121A; Spec. MIL-C-10731 (Sig C)			
PROCUREM'T COG.: USA		DESIGN COG.: USA, CSL	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.2.8	
- Electronics Test Equipment -			TS-268E/U

project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U.S.A.

CRYSTAL RECTIFIER TEST SET TS-268E/U

ELECTROMECHANICAL DESCRIPTION: (Continued)
Basic Meter Accuracy: ±2% of full scale.
Temperature Range: -20° C. (-4° F.) to +49° C. (+120° F.).
Type Crystals Checked: 1N21, 1N21A, 1N21B, 1N23, 1N23A, 1N23B, 1N25, and 1N26.

MANUFACTURERS' OR CONTRACTORS' DATA:

George Voron and Company, 835 North 19th Street, Philadelphia, Pennsylvania Army Order No. 37850-Phila-53-34(31).

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 33A1-12-46-1 (TM 11-1242) (Operation, Maintenance, and Repair Instructions).

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weigh Packe (Lbs.
			H	W	D	
1	Crystal Rectifier Test Set, TS-268E/U (Water Resistant Carton)	0.32	6-1/2	10-1/2	8	8

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weigh (Lbs.
				H	W	D	
1	Crystal Rectifier Test Set TS-268E/U (Complete)	Aluminum	7CAC-80318-56365 R16-AN-TS-268E/U 3F4325-268E	3-1/2	8	5-1/2	4

TRANSISTOR TESTER TS-1100/U

SHORT
BETA
Ico
MICROAMPERES
PNP
NPN
SHORT
BETA
OFF
TEST
Ico
BIAS SELECTOR
TRANSISTOR
TESTER
POWER
OFF
RED
LINE
SET

FUNCTIONAL DESCRIPTION:

A portable, general purpose instrument used to perform leakage current (I_{CO}) and Beta parameter tests of transistors. Test results are indicated directly on a calibrated meter. A table interprets Beta corrections when the resistance of the external circuit is less than 500 ohms.

RELATIONSHIP TO OTHER EQUIPMENT:

The TS-1100/U is electrically equivalent to Transistor Tester Sierra 219A.

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The instrument consists essentially of a reference oscillator, a tuned amplifier, a variable bias supply, a meter, and associated switching circuits. The reference oscillator provides a 1 kilocycle per second test signal which is inductively coupled to the transistor under test. The variable bias supply provides collector voltage for the transistor under test. The tuned amplifier is connected across the collector load resistance and responds to the 2

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.			

PROCUREM'T INFO.: Spec-T-2589

PROCUREM'T COG.: Navy   DESIGN COG.: Navy

F.I.I.N.:   FUNCTIONAL CLASS. NO.: 10.2.8

TRANSISTOR TESTER TS-1100/U

ELECTROMECHANICAL DESCRIPTION: (Continued)

kilocycle per second, second harmonic output of the reference oscillator. The gain of the tuned amplifier is preset so that full scale meter deflection corresponds to an average collector current of 1 milliamp. Switching circuits permit the tuned amplifier and meter to be connected across the transistor base load resistance. The meter indicates directly the value of the second harmonic signal developed across the base load resistance. When the external resistance of the circuit under test is less than 500 ohms the harmonic output of the reference oscillator introduces measurement errors. An energized panel lamp indicates that this condition exists.

Power Supply: Internal battery either mercury or zinc-carbon type.
Beta Measurement Range: 10 to 100 microamps.
Leakage Current Measurement Range (I_{CO}): 0 to 50 microamps.
Accuracy:
  Transistor In Circuit: ±20% for external loads above 500 ohms.
  Transistor Out of Circuit: ±10%.
Variable Bias Supply Voltage: 3, 6, 12 volts DC.
Operating Temperature Range: 0°C to 50°C.

MANUFACTURERS' OR CONTRACTORS' DATA:

Sierra Electronics Corporation, 3885 Bohannon Drive, Menlo Park, California.

TUBE COMPLEMENT:

REFERENCE DATA AND LITERATURE:

Manufacturer's Catalog.

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weigh Packe (Lbs.)
			H	W	D	
1	Transistor Tester TS-1100/U					16

TRANSISTOR TESTER TS-1100/U

QUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Transistor Tester TS-1100/U	plastic		9	7-5/8	6-1/2	11-3/4
1	Set, Test Leads						
1	Instruction Manual						

TEST SET, CRYSTAL CHECKER
Model No. 390A-3
(Airborne Instruments Laboratory)

FUNCTIONAL DESCRIPTION:

A portable self-contained test set designed to give an indication of the important characteristics of microwave crystals, such as crystal balance and conversion loss. The test set may be used to measure the relative noise figure of microwave mixer crystals, measure the relative sensitivity of microwave detector crystals, and to obtain an approximate impedance check for selecting matched crystals for use in balanced mixer crystals. Both ceramic cartridge and coaxial types, with normal and reversed polarities, may be checked. Remote test jack permits testing crystals without removing them from the equipment.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: Minimum conversion loss can be predicted from the static voltage-current curve of the crystal, therefore, a two-point DC measurement of voltages is made of the crystal under test, and the resultant difference in current calibrated directly in minimum available conversion loss. Switching to the calibrate position and varying the potentiometer establishes one point on the voltage-

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-801318-5632		
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.2.8	
	- Electronics Test Equipment -		Airborne 390A-3

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

TEST SET, CRYSTAL CHECKER
Model No. 390A-3
(Airborne Instruments Laboratory)

ELECTROMECHANICAL DESCRIPTION: (Continued)

current curve. Switching then to the test position establishes the second poin which shows the indicated current on a calibrated meter as a function of the minimum available conversion loss.

Power Supply: One 1.5 volt battery.

Accuracy:

Relative Noise: 1.0 decibel maximum error.
0.3 decibel mean error.

Relative Sensitivity: 2.0 decibels maximum error.
0.6 decibel mean error.

Pair Matching: Sufficient to assure 20 decibels suppression of local oscillato noise.

Conversion Loss: 0.9 decibel maximum error.
0.3 decibel mean error.

Noise Temperature: 0.7 maximum error.
0.3 mean error.

MANUFACTURERS' OR CONTRACTORS' DATA:

Airborne Instruments Laboratory, 160 Old Country Road, Mineola, Long Island, New York; Contract No. AF 33(604)55-1852; Approximate Cost per Unit, $110.00

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

Manufacturer's Brochure.

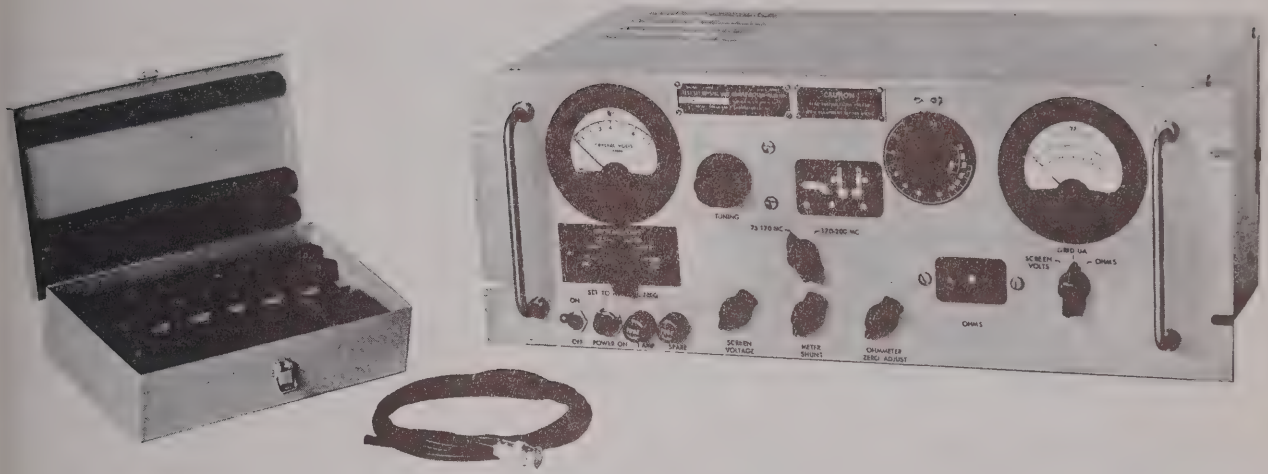
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weigh Packe (Lbs.
			H	W	D	
1	Test Set, Crystal Checker Airborne Model No. 390A-3	0.2	8	8	5-1/2	5

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weigh (Lbs.
				H	W	D	
1	Test Set, Crystal Checker Airborne Model No. 390A-3		7CAC-801318-5632	6	6	3-1/2	2-3/4

TEST SET, CRYSTAL UNIT QUARTZ AN/TSM-15



FUNCTIONAL DESCRIPTION:

A portable, general purpose instrument used for measuring the electrical parameter of communication-type quartz crystals. Provision is made to directly meas-ure the effective series-resonance resistance of a piezo-electric quartz crystal n its holder. Proper inductance for any crystal is determined by measuring its capacity near the frequency of use, then selecting a resonating inductance from calibration curves. A voltmeter measures the RF voltage across the crystal sock-et, from which the power dissipated in the crystal is computed. A microammeter ndicates the screen voltage and grid current of the oscillator tube and the resist-nce of a substitution resistor.

RELATIONSHIP TO OTHER EQUIPMENT:

Similar to Radio Frequency Laboratories, Inc. Model 1207 Crystal Impedance Meter.

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.			
PROCUREM'T INFO.:			
PROCUREM'T COG.: Army		DESIGN COG.: Army, SSL	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.2.9	
- Electronics Test Equipment -		AN/TSM-15	

TEST SET, CRYSTAL UNIT QUARTZ AN/TSM-15

ELECTROMECHANICAL DESCRIPTION:

Power Supply: 115 or 230 volts, AC, single-phase, 50 to 1000 cycles per second.
Frequency Range: 75 to 200 megacycles per second.
Characteristics:
  Crystal Resonance Resistance: 10 to 125 ohms.
  Crystal Capacitance: 11 micromicrofarads, maximum.
Accuracy:
  Crystal Resonant Frequency: ±0.001%.
  Crystal Unit Effective Resistance: ±5 ohms or ±10%.
  Crystal RF Voltage: ±10%.
  Crystal Power Dissipation: ±30%.
Crystal Power Dissipation: Variable 0.4 to 4 milliwatts.

MANUFACTURERS' OR CONTRACTORS' DATA:

Radio Frequency Laboratories, Incorporated, Boonton, New Jersey.

TUBE COMPLEMENT:

1 5Y3GT/G, 1 OA2, 1 6AN4, 1 6AK5

REFERENCE DATA AND LITERATURE:

Manufacturer's Catalog.

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weigh Packe (Lbs.
			H	W	D	
	Test Set, Crystal Unit Quartz, AN/TSM-15					

TEST SET, CRYSTAL UNIT QUARTZ AN/TSM-15

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Test Set, Crystal Unit Quartz AN/TSM-15	metal		7	19	10-1/2	
6	Variable High Frequency Resistors						
14	Cancellation Inductances						
1	Carry Case for High Frequency Resistors and Cancellation Inductances						

OSCILLATOR O-14/FSM-1
(TEST SET, CRYSTAL UNIT, QUARTZ, O-14/FSM-1)

UNCTIONAL DESCRIPTION:

A portable, special purpose, precision instrument designed to compare the fre-
uency of a crystal in a crystal holder or crystal blank with that of a crystal of
nown frequency. Minimum required activity readings can also be established.
his permits use of this equipment for checking frequency during final hand-lap-
ing or etching process, and for checking groups of crystals of nearly identical
requencies for both frequency and activity. This equipment is used at the depot
evel.

ELATIONSHIP TO OTHER EQUIPMENT:

This equipment is used in testing Radio Receiving Set AN/FRR-12. Adapter Kit
X-129/FSM-1 is required to adapt crystals with different types of mounting to
his instrument.

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-801318-563		3F3582-14
PROCUREM'T INFO.: Army Spec. 271-3061; Army Dwg. SC-D-12309			
PROCUREM'T COG.: USAF	DESIGN COG.: USAF, Rome		
F.I.I.N.:	FUNCTIONAL CLASS. NO.: 10.2.9		
- Electronics Test Equipment -			O-14/FSM-1

project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U.S.A.

OSCILLATOR O-14/FSM-1
(TEST SET, CRYSTAL UNIT, QUARTZ, O-14/FSM-1)

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The equipment consists of two identical tuned-plate, crystal-controlled oscillators, and a combined detector audio-amplifier circuit. A built-i power supply provides the necessary filament and plate voltages. Each oscillato is provided with a band switch to cover the frequency range in five overlappin bands. The components of each oscillator are so selected that the electrica characteristics of each are identical throughout the frequency range. A jac with an associated gain control is provided in the amplifier output for connectin headphones. Indication of crystal activity is obtained by means of a microammeter on the front panel. This meter can be switched from one oscillator to th other by a panel mounted toggle switch.

Power Supply: 110 volts, AC, 60 cycles per second, single phase, 60 watts.

Frequency Range: 0.090 to 18.3 megacycles per second in 5 bands: 0.090 to 0.370 0.350 to 1.2; 1.1 to 3.0; 3.0 to 9.0; 6.1 to 18.3 megacycles per second.

Activity Range: 0 to 925 microamperes.

Meter Range: 0 to 200 microamperes, 0 to 350 microamperes, 0 to 925 microamperes.

Master Crystal Frequency Deviation: Not more than 20% of the maximum allowabl deviation on crystal nameplate.

Frequency Deviation for Frequency and Activity Quick Check: Within 6 kilocycle per second of the master crystal.

MANUFACTURERS' OR CONTRACTORS' DATA:

Crystal Research Products, Chicago, Illinois; Army Order No. 12112-PHILA-45-10.

TUBE COMPLEMENT:

2 JAN-6J5, 1 JAN-6SN7GT, 1 JAN-5Y3GT, 1 JAN-OD3/VR-150.

REFERENCE DATA AND LITERATURE:

TO 16-35O14-5 (TM 11-2670) (Operating and Maintenance Instructions).

SHIPPING DATA:

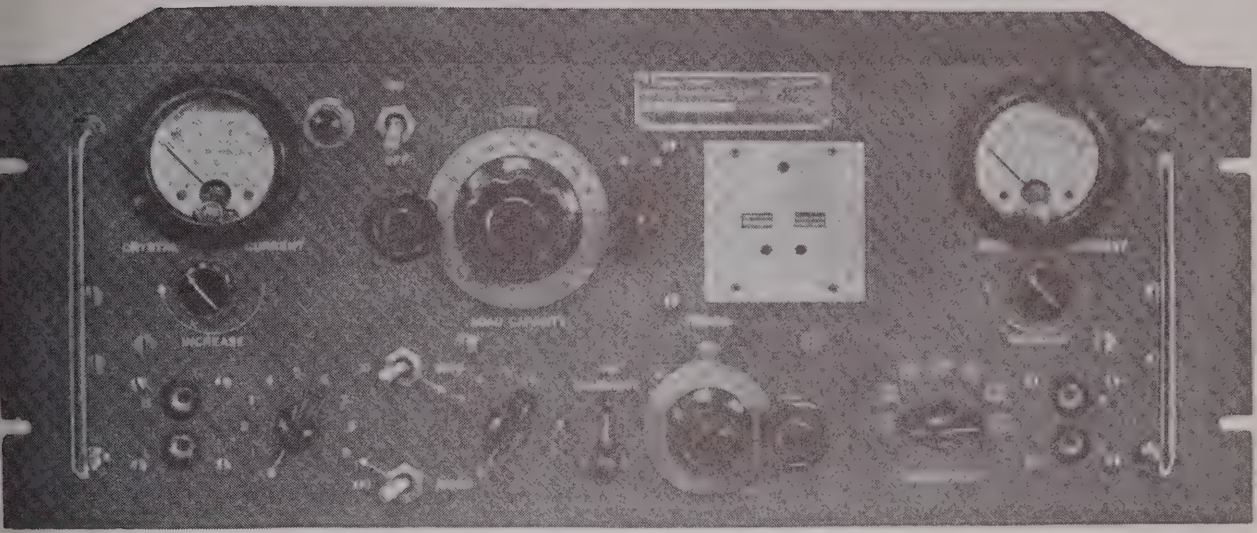
No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Over-all Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
1	Oscillator O-14/FSM-1 (Export Packed)	2.005	11	21	15	45

OSCILLATOR O-14/FSM-1
(TEST SET, CRYSTAL UNIT QUARTZ, O-14/FSM-1)

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Over-all Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Oscillator O-14/FSM-1	Metal	7CAC-801318-563 3F3582-14	9	19	11	30
1	Set Spare Tubes						
2	Instruction Book TM 11-2670			8-1/2	5-1/2	1/4	0.25

CRYSTAL IMPEDANCE METER TS-330/TSM
(TEST SET, CRYSTAL UNIT, QUARTZ, TS-330/TSM)



UNCTIONAL DESCRIPTION:

A portable, general purpose test instrument designed to measure the equivalent ectrical parameters of quartz crystals of the type used for communication puroses. Provision is made to measure directly the effective series-resonant and nti-resonant resistances of a piezo-electric quartz crystal in its holder. The load apacitance is obtained by applying dial markings to a calibration chart. With the atic capacity measured by an external capacity measuring device and with the eries-resonant and anti-resonant frequency measured by an external frequency easuring device, the series capacitance and inductance can be calculated. A millinmeter measures the magnitude of the RF current through the crystal under test. microammeter indicates the magnitude of oscillation of the oscillator tube by easuring its grid current. Frequency is selected by a switch and a fine tuning ontrol. The equipment can be rack mounted.

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-801318-5475	F16-Q-304336-200	3F4325-330
PROCUREM'T INFO.:	Army Spec. 71-3376		
PROCUREM'T COG.:	Army	DESIGN COG.: Army, SSL	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.2.9	
	- Electronics Test Equipment -		TS-330/TSM

project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U.S.A.

CRYSTAL IMPEDANCE METER TS-330/TSM
(TEST SET, CRYSTAL UNIT, QUARTZ, TS-330/TSM)

RELATIONSHIP TO OTHER EQUIPMENT:

Part of Standard Crystal Test Set AN/TSM-3. Similar to Lavoie Laboratorie Inc. Model 51, Crystal Impedance Meter. Same as Radio Frequency Laboratori Model 459, Crystal Impedance Meter.

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The crystal impedance meter is essentially a tuned-gri tuned-plate oscillator circuit in which the crystal unit to be tested is placed the feedback path. The crystal unit thus controls the oscillation frequency of t feedback circuit and the amplitude of oscillation. The series-resonance resis ance is determined by substituting a known resistance for the crystal unit. Th resistance is adjusted until the same amplitude of oscillation that resulted wi the crystal unit in the circuit is obtained without changing the oscillation fr quency. The anti-resonance resistance is determined in a similar manner exce a load capacitor is inserted in series with the crystal unit when making the meas urement and the known resistance is substituted for this series combination.

Power Supply: 115 volts, AC, 50 to 1720 cycles per second, single phase, 35 watt

Frequency Range: 1.0 to 15.0 megacycles per second in seven ranges: 1.00 to 1.5 1.50 to 2.25, 2.25 to 3.40, 3.40 to 5.10, 5.10 to 7.50, 7.50 to 10.00, 10.00 to 15.0 megacycles per second, ranges overlap.

Resistance Calibration Ranges:
- 0 to 100 ohms in 1-ohm steps.
- 100 to 990 ohms in 10-ohm steps.
- 1000 to 9900 ohms in 100-ohm steps.

Load Capacitance Range: 12 to 110 micromicrofarads. Dial is marked 0 to 10 The calibration chart translates dial markings to load capacity in micromicr farads.

Milliammeter Scale: 0 to 100 milliamperes.

Microammeter Scale: 0 to 200 microamperes.

Crystal Pin Spacing: 0.5 to 1.25 inches.

Accuracy:
- Milliammeter: ±2% for full scale reading.
- Microammeter: ±2% for full scale reading.

MANUFACTURERS' OR CONTRACTORS' DATA:

Radio Frequency Laboratories, Inc., Boonton, New Jersey; SigC Order N 11698-PHILA-50-7.

TUBE COMPLEMENT:

1 JAN-6V6GT, 1 JAN-5Y3GT, 2 JAN-OC3/VR-105.

REFERENCE DATA AND LITERATURE:

TO 16-35TS-330-5 (TM 11-5051) (Maintenance Instructions).

CRYSTAL IMPEDANCE METER TS-330/TSM
(TEST SET, CRYSTAL UNIT, QUARTZ, TS-330/TSM)

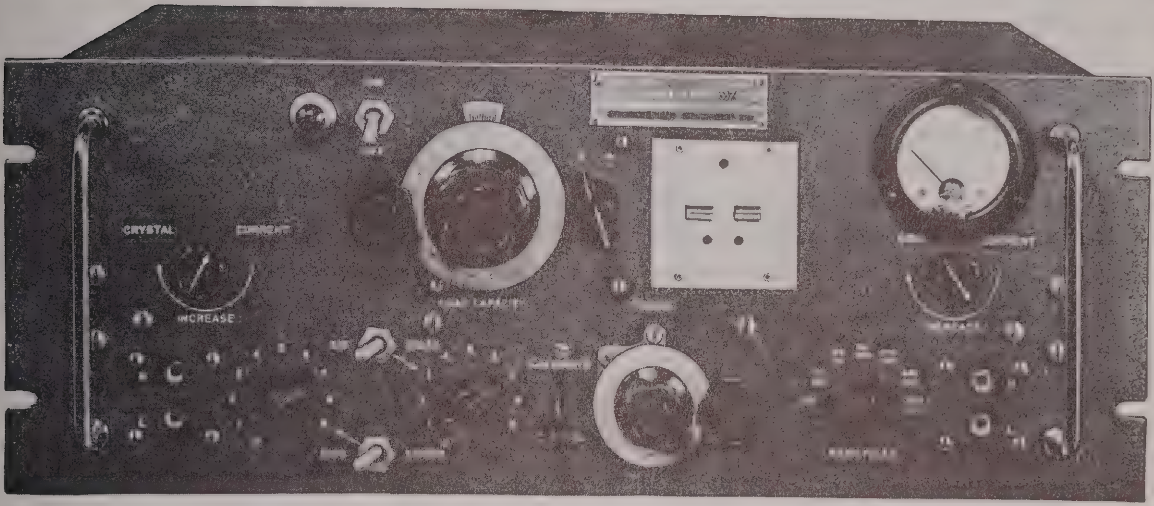
HIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
1	Crystal Impedance Meter TS-330/TSM (Export Packed)	5.7	17	29	20	60

QUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Crystal Impedance Meter TS-330/TSM Including:	Metal	7CAC-801318-5475 F16-Q-304336-200 3F4325-330	7	19	10-1/2	25
1	Case CY-23/TSM-1						
1	Cable Assembly (RF Pickup) AN Type RG-8/U JAN-C-17 Cable		3E7350-2.58.2	72 long			
1	Calibration Chart						
2	JAN-6V6GT (Spare Tubes)		2J6V6GTY				
2	JAN-5Y3GT (Spare Tubes)		2J5Y3GT				
4	JAN-OC3/VR-105		2JOC3W				
2	Fuse FU-26 1 amp. 250 V. glass enclosed		3Z1926				
3	Lamp, incandescent SigC Lamp LM-27						
2	Technical Manual TM 11-5051						

CRYSTAL IMPEDANCE METER TS-537/TSM
(TEST SET, CRYSTAL UNIT, QUARTZ, TS-537/TSM)



UNCTIONAL DESCRIPTION:

A portable, general purpose, test instrument designed to measure the equivalent ectrical parameters of quartz crystals of the type used for communication puroses. Provision is made to measure directly the effective series-resonant and ti-resonant resistances of a piezo-electric quartz crystal in its holder. The load pacitance is obtained by applying dial markings to a calibration chart. With the atic capacity measured by an external capacity measuring device and with the ries-resonant and anti-resonant frequency measured by an external frequency easuring device, the series capacitance and inductance can be calculated. A icroammeter indicates the magnitude of oscillation of the oscillator tube by measing its grid current. Frequency is selected by a switch and a fine tuning control. ne equipment can be rack mounted.

ELATIONSHIP TO OTHER EQUIPMENT:

Part of Standard Crystal Test Set AN/TSM-3. Similar to Lavoie Laboratories,

(Continued)

	AIR FORCE	NAVY	ARMY
YPE CLASS.	Standard		
OCK NOS.	7CAC-718601	F16-Q-304663-200	3F4325-537
ROCUREM'T INFO.: Army Spec. 71-3382			
ROCUREM'T COG.: Army		DESIGN COG.: Army, SSL	
I.I.N.:		FUNCTIONAL CLASS. NO.: 10.2.9	
- Electronics Test Equipment -			TS-537/TSM

oject was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Betheada, Md. - Multilithed in U. S. A.

CRYSTAL IMPEDANCE METER TS-537/TSM
(TEST SET, CRYSTAL UNIT, QUARTZ, TS-537/TSM)

RELATIONSHIP TO OTHER EQUIPMENT: (Continued)

Incorporated, Model 50, Crystal Impedance Meter.

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The crystal impedance meter is essentially a tuned-grid tuned-plate oscillator circuit in which the crystal unit to be tested is placed i the feedback path. The crystal unit thus controls the oscillation frequency of th feedback circuit and the amplitude of oscillation. The series-resonance resistance is determined by substituting a known resistance for the crystal unit. Thi resistance is adjusted until the same amplitude of oscillation that resulted wit the crystal unit in the circuit is obtained without changing the oscillation frequency. The anti-resonance resistance is determined in a similar manner excep a load capacitor is inserted in series with the crystal unit when making the measurement and the known resistance is substituted for this series combination.

Power Supply: 115 volts, AC, 50 to 1720 cycles per second, 35 watts.

Frequency Range: 75 to 1100 kilocycles per second in six ranges: 75 to 120, 120 t 190, 190 to 290, 290 to 465, 465 to 680, 680 to 1100.

Resistance Calibration Ranges: 0 to 990 ohms in 10-ohm steps; 0 to 9900 ohms i 100-ohm steps; 0 to 99,000 ohms in 1000-ohm steps.

Load Capacitance Range: 12 to 110 micromicrofarads. Dial is marked 0 to 10 The calibration chart translates dial markings to load capacity in micromicrofarads.

Microammeter Scale: 0 to 200 microamperes.

Crystal Pin Spacing: 0.5 to 1.25 inches.

MANUFACTURERS' OR CONTRACTORS' DATA:

Radio Frequency Laboratories, Inc., Boonton, New Jersey; SigC Order N 11698-PHILA-50-7; Approximate Cost per Unit, $240.00, 3 May 1953.

TUBE COMPLEMENT:

1 JAN-6V6GT, 1 JAN-5Y3GT, 2 JAN-OC3/VR-105.

REFERENCE DATA AND LITERATURE:

TO 16-35TS537-5 (TM 11-5052) (Instruction Book).

SHIPPING DATA:

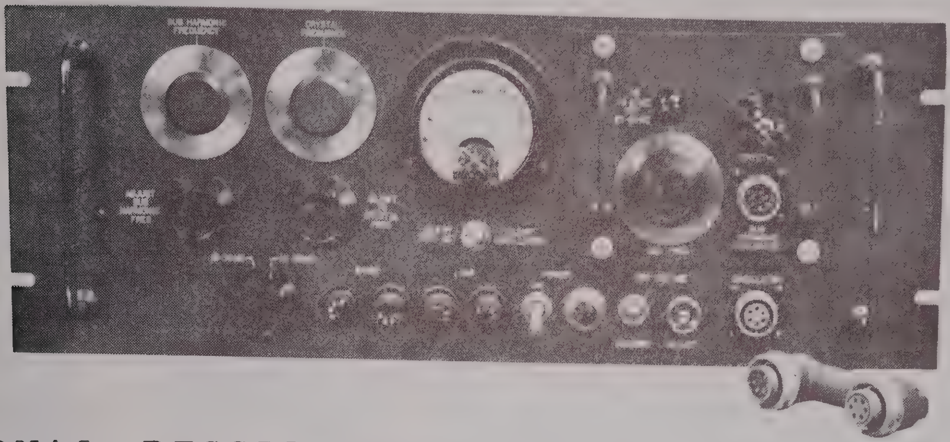
No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Over-all Dimensions (inches)			Weigh Packec (Lbs.
			H	W	D	
1	Crystal Impedance Meter TS-537/TSM (Export Packed)	5.7	17	29	20	60

CRYSTAL IMPEDANCE METER TS-537/TSM
(TEST SET, CRYSTAL UNIT, QUARTZ, TS-537/TSM)

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Over-all Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Crystal Impedance Meter TS-537/TSM Including:	Metal	7CAC-718601 F16-Q-304663-200 3F4325-537	7	19	10-1/2	25
1	Case						
1	RF Pickup Cable		3E7350-2.58.2				
1	Calibration Chart						
2	Technical Manual TM 11-5052						

CRYSTAL TEST SET TS-546/U
(TEST SET, CRYSTAL UNIT, QUARTZ, TS-546/U)



UNCTIONAL DESCRIPTION:

A portable, special purpose test oscillator used for measuring the activity of a ystal unit. It includes provisions for measuring crystal frequencies when used th conventional frequency standards. This set is used in depot maintenance and sting. Indication is provided on calibrating resistor units and on a frequency meter used with this set.

ELATIONSHIP TO OTHER EQUIPMENT:

This set is used to test Crystal Unit, CR-9/U.

LECTROMECHANICAL DESCRIPTION:

rcuit Information: A crystal socket is provided for insertion of the crystal unit. The test oscillator acts as a comparison for determining the activity of the crystal. This is indicated on the calibrating resistor units. There is a radio frequency output socket on the set to which a frequency meter can be attached to measure the actual frequency of the crystal.

wer Supply: 110 volts, AC, 60 cycles per second, single phase.

equency Range: 15 to 50 megacycles per second.

pe of Transmission: Continuous Wave.

ANUFACTURERS' OR CONTRACTORS' DATA:

Western Electric Company, 120 Broadway, New York, New York; USAF Contract . W33-038-ac-13286; Order No. 4367-DAY-45.

	AIR FORCE	NAVY	ARMY
YPE CLASS.			
OCK NOS.			
ROCUREM'T INFO.:			
ROCUREM'T COG.: USAF		DESIGN COG.: USAF, C&N	
I.I.N.:		FUNCTIONAL CLASS. NO.: 10.2.9	
	- Electronics Test Equipment -		TS-546/U

oject was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U.S.A.

CRYSTAL TEST SET TS-546/U
(TEST SET, CRYSTAL UNIT, QUARTZ, TS-546/U)

TUBE COMPLEMENT:
1 JAN-6AL5, 1 JAN-6Y6GT/G, 1 JAN-6AK5, 1 JAN-2C51, 1 JAN-5Y3GT/G
1 JAN-OD3/VR-150.

REFERENCE DATA AND LITERATURE:
Manufacturer's Instruction Book and Calibrating Chart.

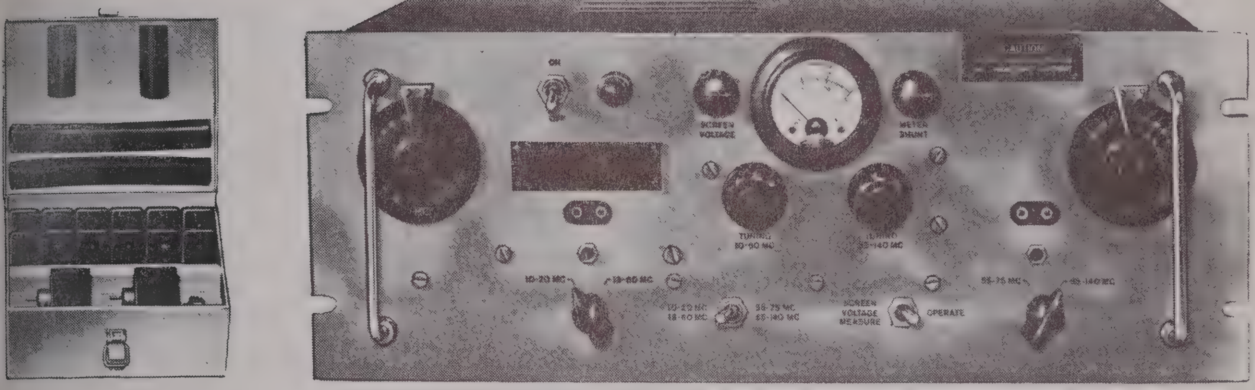
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weigh Packe (Lbs.
			H	W	D	
1	Crystal Test					

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Over-all Dimensions (inches)			Weight (Lbs.
				H	W	D	
1	Crystal Test Set, TS-546/U Including:	Steel		7	19	11	57 (Complete
1	Sub-Harmonic Generator			7	19	11	28
1	Oscillator O-58/U			4-5/8	5-3/8	4-1/2	2
1	Calibrating Resistor MX-916/U			1-5/16	11/16	1-1/16	0.06
1	Calibrating Resistor MX-917/U			1-5/16	11/16	1-1/16	0.06
1	Cord CG-428/U			6-3/8	1-1/2	5/8	0.25
1	Cord CX-1041/U			3-1/2	1-1/8	1-3/4	0.19
1	Cord CX-1042/U			40	1-1/8	1-1/8	0.5
1	Case CY-23/TSM-1			11-1/2	23	20	25.63

CRYSTAL IMPEDANCE METER TS-683/TSM
(TEST SET, CRYSTAL UNIT, QUARTZ, TS-683/TSM)


ON
SCREEN VOLTAGE
METER SHUNT
CAUTION
TUNING 10-60 MC
TUNING 55-140 MC
10-20 MC
18-60 MC
10-22 MC 18-60 MC
55-75 MC 55-140 MC
SCREEN VOLTAGE MEASURE
OPERATE
55-75 MC
55-140 MC

UNCTIONAL DESCRIPTION:

A portable, general purpose test oscillator used for measuring the equivalent ectrical parameters of quartz crystals of the type used for communication pur- ses. This meter is used in depot testing. Provision is made for measuring di- ctly the effective series-resonant and anti-resonant resistances of a piezo-electric artz crystal (in its holder).

ELATIONSHIP TO OTHER EQUIPMENT:

LECTROMECHANICAL DESCRIPTION:

rcuit Information: This meter consists of two similar tuned-plate, tuned-grid variable-frequency oscillators and a power supply with a VR tube regulated plate voltage source. Each oscillator covers two of the specified bands, with switches to permit the use of either band, as desired.

(Continued)

	AIR FORCE	NAVY	ARMY
YPE CLASS.	Standard		
TOCK NOS.	7CAC-801318-630	F16-Q-304897-200	3F4314-3.2
ROCUREM'T INFO.:	Spec.(SigC) MIL-C-10479		
ROCUREM'T COG.:	Army	DESIGN COG.: Army, SSL	
.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.2.9	

roject was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

CRYSTAL IMPEDANCE METER TS-683/TSM
(TEST SET, CRYSTAL UNIT, QUARTZ, TS-683/TSM)

ELECTROMECHANICAL DESCRIPTION: (Continued)

The microammeter with an adjustable protective shunt is used as a grid current indicator. Through a momentary contact switch, the unshunted microammeter may be connected with a series resistor to measure the screen grid potential of the oscillator tube in use.

Power Supply: 115 or 230 volts, AC, 50 to 1000 cycles per second, single phase 30 watts.

Frequency Range: 10 to 140 megacycles per second in four ranges: 10 to 20, 18 t 60, 55 to 75, 65 to 140 megacycles per second.

Type of Transmission: Continuous Wave.

Equivalent Series Resistance Range: 10 to 150 ohms.

Accuracy: 10% in frequency range, 10 megacycles per second to 100 megacycles pe second.

MANUFACTURERS' OR CONTRACTORS' DATA:

Radio Frequency Laboratories, Inc., Boonton, New Jersey; Army Contract No DA 36-039-sc-5608, dated 25 April 1951; Order No. 14211-PHILA-51-93, dated 1 December 1951; Approximate Cost per Unit, $295.00.

TUBE COMPLEMENT:

2 JAN-5654, 1 JAN-5Y3GT, 1 JAN-OA2.

REFERENCE DATA AND LITERATURE:

TO 16-35TS683-5 (TM 11-2652) (Instruction Book).

SHIPPING DATA:

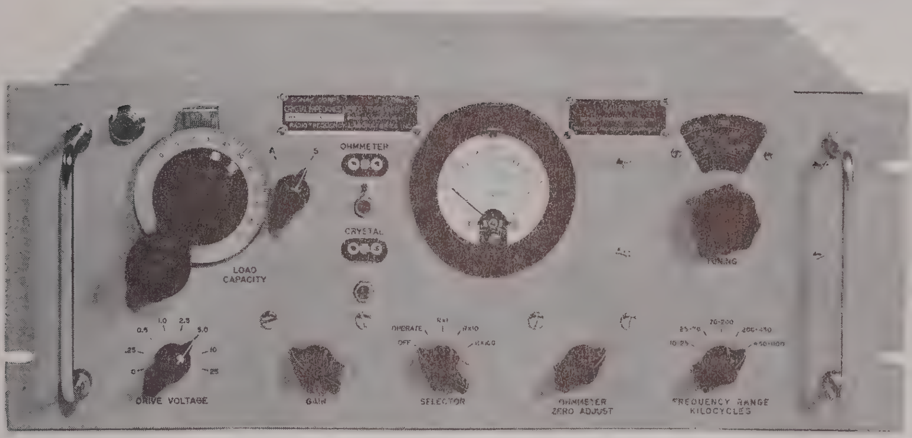
No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Over-all Dimensions (inches)			Weight Packed (Lbs.
			H	W	D	
1	Crystal Impedance Meter TS-683/TSM (Export Packed, Water-Resistant Carton)	3.8	12	34	14-1/2	46

CRYSTAL INPEDANCE METER TS-683/TSM
(TEST SET, CRYSTAL UNIT, QUARTZ, TS-683/TSM)

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Over-all Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Crystal Impedance Meter TS-683/TSM	Metal	7CAC-801318-630 F16-Q-304897-200 3F4314-3.2	7	19	10-1/2	20.00
1	Set of Tubes (Spares)						
6	Fuse FU-26 (Spare)		3Z1926	1-1/4 long	1/4 dia.		
1	Lamp LM-27 (Spare)		2Z5927				
1	Cord, RF Pickup (Spare)			60 long			0.62
1	Carrying Case	Metal		7	19	10-1/2	
12	Calibrating Resistor			1	3/4	5/16	0.19
1	Adapter AR-1			2	1-1/2	1-5/8	0.19
1	Adapter VR-2			1-3/4	1-1/2	2-1/4	0.20
2	Instruction Book TM 11-2652						

CRYSTAL IMPEDANCE METER TS-710(XS)/TSM
(TEST SET, CRYSTAL UNIT, QUARTZ, TS-710(XS)/TSM)


OHMMETER
CRYSTAL
LOAD CAPACITY
TUNING
DRIVE VOLTAGE
0.5
1.0
2.5
5.0
.25
0
10
25
GAIN
OPERATE
OFF
R×1
R×10
R×40
SELECTOR
OHMMETER ZERO ADJUST
10-25
25-70
70-200
200-450
450-1100
FREQUENCY RANGE KILOCYCLES

FUNCTIONAL DESCRIPTION:

A portable, general purpose, test set used to check the frequency and indicate he equivalent resistance and either the power dissipated in or the voltage across he equivalent resistance of low and very low frequency crystals. A variable capaitor with a vernier drive and indicator is provided. Frequency range is read diectly from the dial settings. A single meter indicates volts and ohms. Capacitance ndications are referred to a calibration chart.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Power Supply: 115 or 230 volts, AC, single phase, 50 to 1000 cycles per second.
Frequency Range: 10 to 1100 kilocycles per second in 5 ranges.
Capacitance Range: 20 to 100 micromicrofarads.
Drive Voltage Range: 0 to 0.25, 0.5, 1.0, 2.5, 5.0, 10, 25 volts.

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.			

PROCUREM'T INFO.: Spec. MIL-T-12333(SigC) dated 12 November 1952
PROCUREM'T COG.: Army DESIGN COG.: Army, SSL
F.I.I.N.: FUNCTIONAL CLASS. NO.: 10.2.9

- Electronics Test Equipment - TS-710(XS)/TSM

project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U.S.A.

CRYSTAL IMPEDANCE METER TS-710(XS)/TSM
TEST SET, CRYSTAL UNIT, QUARTZ, TS-710(XS)/TSM)

ELECTROMECHANICAL DESCRIPTION: (Continued)
Resistance Range: 0 to 50,000, 500,000, 5,000,000 ohms.
RF Power Level: 0.10 to 10 milliwatts.
Crystal Unit Effective Resistance Measuring Accuracy: ±10%.
Capacitance Reading Accuracy: ±0.2 micromicrofarads.
RF Voltmeter Measuring Circuit Accuracy: ±10%.

MANUFACTURERS' OR CONTRACTORS' DATA:
Radio Frequency Laboratories, Inc., Boonton, New Jersey; Army Contract No
DA-36-039-sc-5474; Order No. 9478-PH-51-91.

TUBE COMPLEMENT:
1 JAN-12AX7, 1 JAN-6AQ5, 2 JAN-OA2, 1 JAN-5Y3, 1 JAN-6BA6.

REFERENCE DATA AND LITERATURE:
Manufacturer's Instruction Book.

SHIPPING DATA:

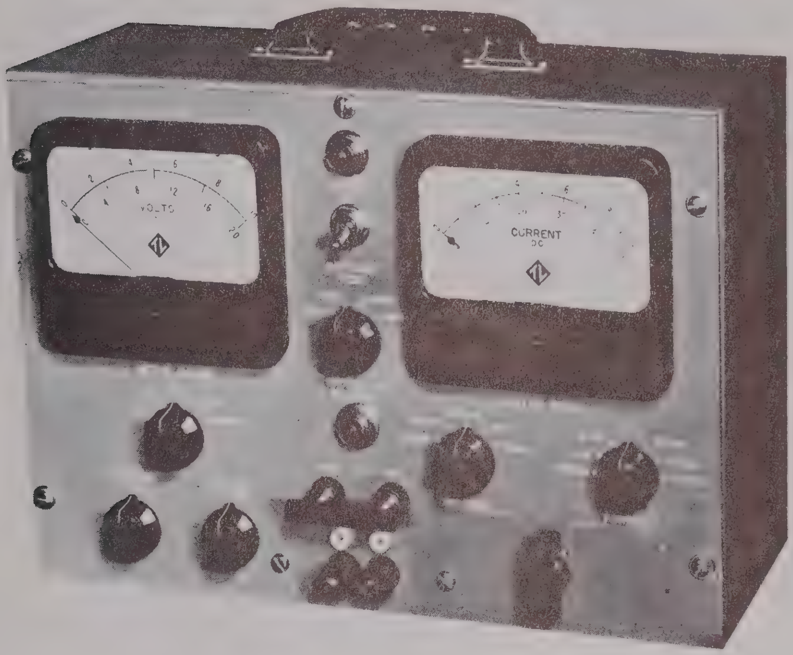
No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Over-all Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

CRYSTAL IMPEDANCE METER TS-710(XS)/TSM
(TEST SET, CRYSTAL UNIT, QUARTZ, TS-710(XS)/TSM)

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Over-all Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Crystal Impedance Meter TS-710(XS)/TSM	Metal		7-1/2	17	8-1/2	20
1	Fuse FU-50		3Z1950	1-1/4 long		1/4	
1	Lamp LM-27		2Z2927				
1	Cord CG-433A/U			60 long			
1	Power Cord CX-112/U						
2	Adapter						
1	Carrying Case for adapters & potentiometer						
1	500,000-ohm potentiometer for use with HC-6/U						
1	Set of Spares						
2	Technical Manual						

DIODE TESTER
MODEL DT-100A
(Teletronics Laboratory, Incorporated)



UNCTIONAL DESCRIPTION:

A portable, general purpose instrument designed to measure the static charac- eristics of germanium diodes. The diode tester may also be used to measure the haracteristics of any nonlinear device within the limits of the tester voltage and urrent range.

ELATIONSHIP TO OTHER EQUIPMENT:

LECTROMECHANICAL DESCRIPTION:

ircuit Information: The test set consists of separate forward and reverse power supplies with continuously variable outputs or the reverse power may be preset. A three position spring return switch provides rapid application of either forward or reverse current. The center position of the switch provides a short test of the diode and is indicated by a light located on the front panel. Two meters indicate the forward or reverse voltage and current. The forward

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.		Substitute Standard	
STOCK NOS.			

PROCUREM'T INFO.:
PROCUREM'T COG.: Navy DESIGN COG.: Commercial
F.I.I.N.: FUNCTIONAL CLASS. NO.: 10.2.9

DIODE TESTER
MODEL DT-100A
(Teletronics Laboratory, Incorporated)

ELECTROMECHANICAL DESCRIPTION: (Continued)

voltage supply consists of an unregulated magnesium and copper sulfide rectifier. The reverse voltage supply is comprised of a regulated, full-wave electron tube rectifier.

Power Supply: 105 to 130 volts, AC, 60 cycles per second, 50 to 60 watts.

Forward Voltage: 0.05 to 2.0 volts, DC, continuously variable.

Reverse Voltage: 0 to 150 volts, DC, continuously variable; three preset screwdriver adjusted voltages between 0 and 150 volts, DC.

Forward Current Ranges: 500 microamps and 1.0, 5, 10, 50, 100 and 500 milliamps full scale.

Reverse Current Ranges: 50, 100, 500 microamps and 1.0 and 5 milliamps full scale.

Accuracy:

Voltmeter: ±2.5%.

Ammeter: ±2.5%.

Regulation: Reverse voltage supply 0.5%.

MANUFACTURERS' OR CONTRACTORS' DATA:

Teletronics Laboratory, Incorporated, 54 Kinkel Street, Westbury, Long Island, New York; Approximate Cost per Unit, $265.00.

TUBE COMPLEMENT:

1 6X4, 1 OB2, 1 6AU6, 1 12AU7.

REFERENCE DATA AND LITERATURE:

Manufacturer's Handbook of Operation and Maintenance.

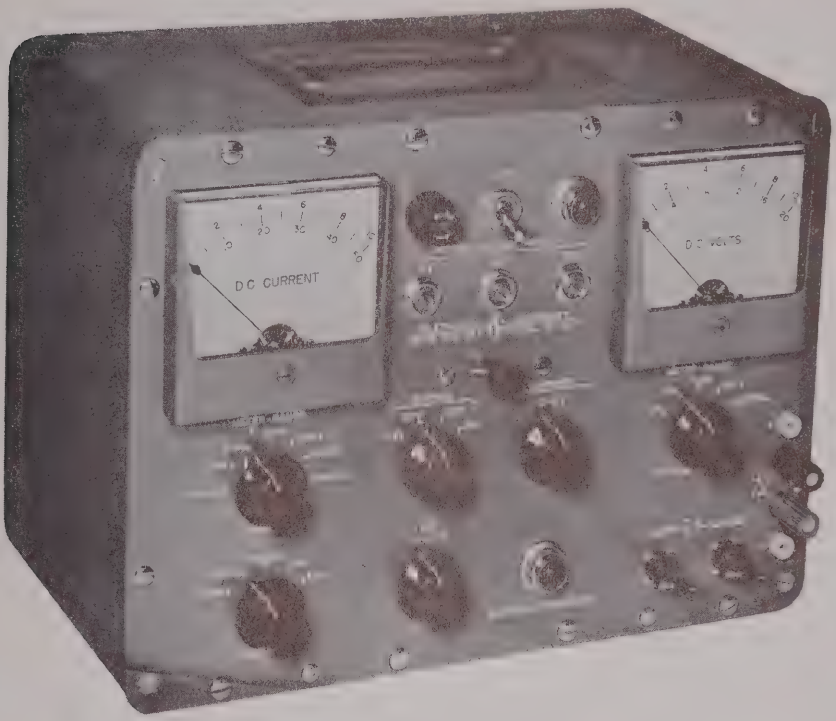
EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Diode Tester DT-100A	metal		10	13-1/2	7	16

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
	Diode Tester, DT-100A					

DIODE TEST SET
MODEL DT-257
(Teletronics Laboratory, Incorporated)



UNCTIONAL DESCRIPTION:

A portable, general purpose test instrument used to measure the static charac-eristics of germanium and low power selenium diodes. The test set may also be sed to measure the characteristics of any nonlinear device within the limits of ts voltage and current ranges such as checking varistors and the regulation char-cteristics of low-voltage, gaseous regulation tubes. Meters on the front panel rovide indications of operating voltage and current. An illuminated panel lamp ndicates a shorted or reversed diode.

ELATIONSHIP TO OTHER EQUIPMENT:

LECTROMECHANICAL DESCRIPTION:

ircuit Information: The instrument includes separate forward and reverse power supplies. The forward voltage supply is unregulated and consists essentially of magnesium and sulfide rectifiers in a bridge configuration. The reverse

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.			
PROCUREM'T INFO.:			
PROCUREM'T COG.: USAF		DESIGN COG.: Commercial	
F.I.I.N.		FUNCTIONAL CLASS. NO.: 10.2.9	

DIODE TEST SET
MODEL DT-257
(Teletronics Laboratory, Incorporated)

ELECTROMECHANICAL DESCRIPTION: (Continued)

voltage supply is essentially a regulated full-wave electron tube rectifier. The separate power supplies permit the forward and reverse operating points of the test set to be preset or varied within the supplies' operating range. A three-position spring-return switch permits transfer between the forward and reverse supplies. Panel mounted spring-clips are provided to hold the diode during test.

Power Supply: 105 to 130 volts, AC, 60 cycles per second, approximately 0.5 amp.

Forward Voltage Supply Output: 0.05 to 2 volts DC, variable; 500 milliamps at 1 volt, 200 milliamps at 2 volts.

Reverse Voltage Supply Output: 0 to 150 volts DC, variable; fixed potentials at 10, 50 and 100 volts DC.

Reverse Voltage Supply Regulation: Better than 0.5%.

Voltmeter:
- Forward Range: 0 to 2 volts DC.
- Reverse Range: 0 to 10, 20, 100, 200 volts DC.
- Sensitivity: 500 ohms per volt.
- Accuracy: ±2% of full scale deflection.

Ammeter:
- Forward Range: 0 to 500 microamps and 0 to 1, 5, 10, 50, 100, 500 milliamps DC.
- Meter Movement: 50 microamps.
- Accuracy: ±2% of full scale deflection.

MANUFACTURERS' OR CONTRACTORS' DATA:

Teletronics Laboratory, Incorporated, 54 Kinkel Street, Westbury, Long Island, New York; Approximate Cost per Unit, $295.00.

TUBE COMPLEMENT:

1 6X4, 1 6BQ7A, 1 6AU6, 1 OB2.

REFERENCE DATA AND LITERATURE:

Manufacturer's Catalog.

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
	Diode Test Set Teletronics DT-257					

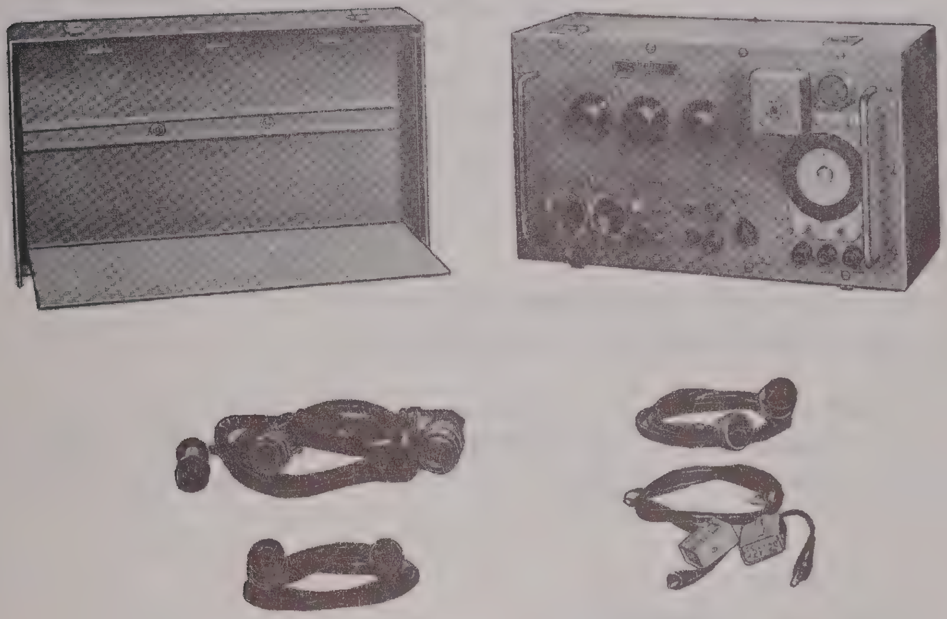
DIODE TEST SET
MODEL DT-257
(Teletronics Laboratory, Incorporated)

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Diode Test Set Teletronics DT-257	metal		8-3/4	11-1/2	6-1/8	15

10.3 ASSEMBLY AND SUBASSEMBLY TEST EQUIPMENT

INDICATOR TEST SET AN/GPM-7



UNCTIONAL DESCRIPTION:

A portable, special purpose test set used for depot testing Airspeed Indicator D-168/APA-44 which is a component of Ground Position Indicator AN/APA-44. his test set provides necessary circuits and voltages for giving a complete operaional check. Indication is provided by indicator lamps and a multimeter which ust be used with this equipment.

ELATIONSHIP TO OTHER EQUIPMENT:

LECTROMECHANICAL DESCRIPTION:

ircuit Information: A power supply provides +150 volts and -150 volts, DC, for ratio and operational checks. A voltage divider and null meter are connected in a bridge circuit to permit the checking of the potentiometer card ratios and the resistance of the heater winding of the mercury relay. Circuits are incorporated

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.	Alternate Standard		
STOCK NOS.	7CAC-801319-2125		

PROCUREM'T INFO.:

PROCUREM'T COG.: USAF — DESIGN COG.: USAF, Arm.

F.I.I.N.: — FUNCTIONAL CLASS. NO.: 10.3

- Electronics Test Equipment - AN/GPM-7

project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U.S.A.

INDICATOR TEST SET AN/GPM-7

ELECTROMECHANICAL DESCRIPTION: (Continued)

to check the rectifying action of the varistors. Provisions are included for operating the servo motor at reduced and at rated voltages. A thermostatically controlled DC electric heater circuit with indicator lamp is provided to control the temperature while the unit is in the "standby" condition. A special socket arrangement permits operation of the mercury relay in a vertical position.

Power Supply: 115 volts, AC, 60 cycles per second, single phase, 1 ampere; 115 volts, AC, 400 cycles per second, single phase, 1 ampere; and 28 volts, DC, 3.5 amperes.

Temperature Range: 0°C. (32°F.) to +45°C. (113°F.), operational; -65°C. (-85°F.) to 85°C. (185°F.), storage.

Relative Humidity: Up to 95% operational and storage.

Altitude Range: Up to 50,000 feet non-operational.

MANUFACTURERS' OR CONTRACTORS' DATA:

Western Electric Company, 120 Broadway, New York, New York; USAF Contract AF 33(038)-7414; Western Electric Spec. GS-15320; Drawing Index No. BB-745047; Approximate Cost per Unit, $7,200.00.

TUBE COMPLEMENT:

2 JAN-OD3/VR150, 2 JAN-6X5WGT.

REFERENCE DATA AND LITERATURE:

TO 33D2-6-2-1 (Operation and Maintenance Instructions).

SHIPPING DATA:

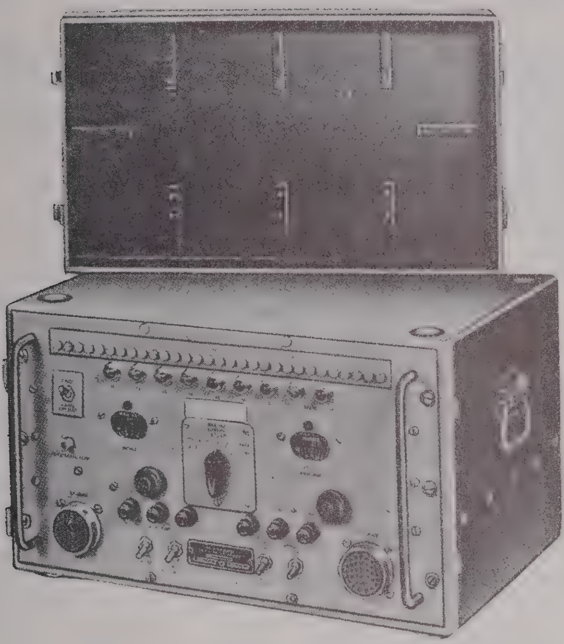
No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Over-all Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

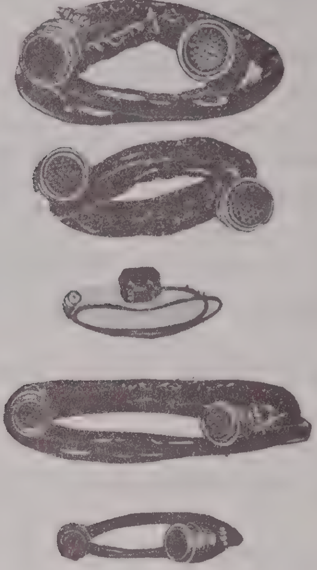
INDICATOR TEST SET AN/GPM-7

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Over-all Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Indicator Test Set AN/GPM-7 (GS-15320)	Aluminum	7CAC-801319-2125	14	19	11	30
	Including:						
1	Airspeed Indicator Test Set GS-15047						
1	26-volt Power Cable BO-711577-2			69 long			
1	115-volt Power Cable BO-711522-2			69 long			
1	Test Cable BO-711503			36 long			
1	Test Cable BR-711524			52 long			

RADAR TEST SET AN/GPM-10





FUNCTIONAL DESCRIPTION:

A portable, special purpose set designed specifically to check proper functioning of all electrical components and circuits of Tracking Control Unit C-293/APA-44 which is part of Ground Position Indicator AN/APA-44. The test set provides electrical information to zero and track the differential synchros located in the tracking control unit. Sufficient power is provided to check the operation of the illumination controls of the unit under test. This set is used in depot testing.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: Two transformer synchros in the test set act as comparison checks for the differential synchro on the tracking control unit. A nullmeter indicates any unbalance in zero setting or tracking. Simple test-lamp circuits indicate circuit continuity in the electrical components of the set being tested.

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.	Alternate Standard		
STOCK NOS.	7CAC-801319-2195		
PROCUREM'T INFO.: USAF Exhibit MCREXG-115, dtd. 19 Aug. 1949			
PROCUREM'T COG.: USAF		DESIGN COG.: USAF, Arm.	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.3	
- Electronics Test Equipment -			AN/GPM-10

project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

RADAR TEST SET AN/GPM-10

ELECTROMECHANICAL DESCRIPTION: (Continued)

The Synchro Test Set AN/USM-17 checks static accuracy of the synchros in Test Set AN/GPM-10.

Power Supply: 115 volts, AC, 400 cycles per second, single phase, 1.5 amperes maximum; or 115 volts, AC, 60 cycles per second, single phase and 115 volts, AC, 400 cycles per second, single phase power can be supplied from Power Distribution Set AN/GPM-9, if used in conjunction with other equipments.

Temperature Range: 0°C. (+32°F.) to +45°C. (+113°F.), operational; -65°C. (-85°F.) to +85°C. (+185°F.), storage.

Relative Humidity: Up to 95% operational and storage.

Altitude Range: Up to 10,000 feet, operational; up to 50,000 feet, non-operational.

MANUFACTURERS' OR CONTRACTORS' DATA:

Western Electric Company, 120 Broadway, New York, New York; Western Electric Spec. GS-15324; Drawing Index BB-745278; USAF Contract AF 33(038) 7414; Approximate Cost per Unit, $4,000.00.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 33D5-3-2-1 (Operation and Maintenance Instructions).

SHIPPING DATA:

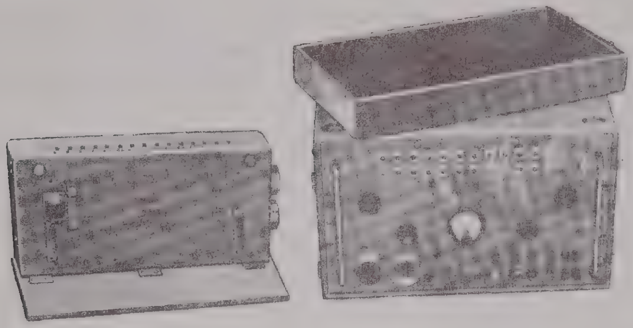
No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Over-all Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

RADAR TEST SET AN/GPM-10

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Over-all Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Radar Test Set AN/GPM-10		7CAC-801319-2195				
	Including:						
1	Tracking Control Unit Test Set GS-15043	Steel		11-3/4	18	19-3/4	80
1	Cable BR-711557			72 long			
1	Cable BR-711558			72 long			
1	Cable BO-711559			36 long			
1	Cable BR-711574			72 long			
1	Cable BO-717885			60 long			

TEST ADAPTER AN/GPM-12



UNCTIONAL DESCRIPTION:

A portable, special purpose depot test equipment used with associated auxiliary quipment for making a thorough functional electrical check of an apparatus panel. pecial test cables are provided to permit the checking of electrical components of e amplifier unit and the servo amplifier which are components of Ground Position dicator AN/APA-44. Tests include functional checks of relays, transformers, witches, and blower motors with associated capacitors and thermal switches. The alues of circuit resistors are checked by means of bridge measurements.

ELATIONSHIP TO OTHER EQUIPMENT:

LECTROMECHANICAL DESCRIPTION:

ircuit Information: Switch controls and adjustable voltages are provided to test relay operation. Indicator and switching circuits are provided for continuity checking. A switching arrangement is provided for connecting a Wheatstone

(Continued)

	AIR FORCE	NAVY	ARMY
YPE CLASS.	Alternate Standard		
TOCK NOS.	7CAC-002902		
ROCUREM'T INFO.: USAF Spec. 71-5056-A			
ROCUREM'T COG.: USAF	DESIGN COG.: USAF, Arm.		
.I.I.N.:	FUNCTIONAL CLASS. NO.: 10.3		
- Electronics Test Equipment -			AN/GPM-12

project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

TEST ADAPTER AN/GPM-12

ELECTROMECHANICAL DESCRIPTION: (Continued)

bridge to test points for resistance measurements. Transformer test facilities and a switching arrangement enable a vacuum tube voltmeter to measure input and output voltages as well as selected test voltages.

Power Supply: 22 to 30 volts, DC, 118 watts; 105 to 125 volts, AC, 400 cycles per second, 6 watts.

Output Voltages: Relay Control Voltage, DC: variable, normally 22 volts. Transformer Test Voltage, AC: variable, 0 to 14 volts; or fixed, 115 ±10 volts.

Panel Voltmeter: 0 to 30 volts, DC, 1000 ohms per volt (measures relay control voltage).

Temperature Range: 0°C. (+32°F.) to +45°C. (+113°F.), operational.

Humidity Range: Up to 95%, relative.

Altitude Range: Up to 50,000 feet, non-operational.

MANUFACTURERS' OR CONTRACTORS' DATA:

Western Electric Company, 120 Broadway, New York, New York; USAF Contract AF 33(038)-7414; Western Electric Spec. GS-15319; Drawing Index No. BB-745048; Approximate Cost per Unit, $12,000.00.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 33AA1-2-1 (Operation and Maintenance Instructions).

SHIPPING DATA:

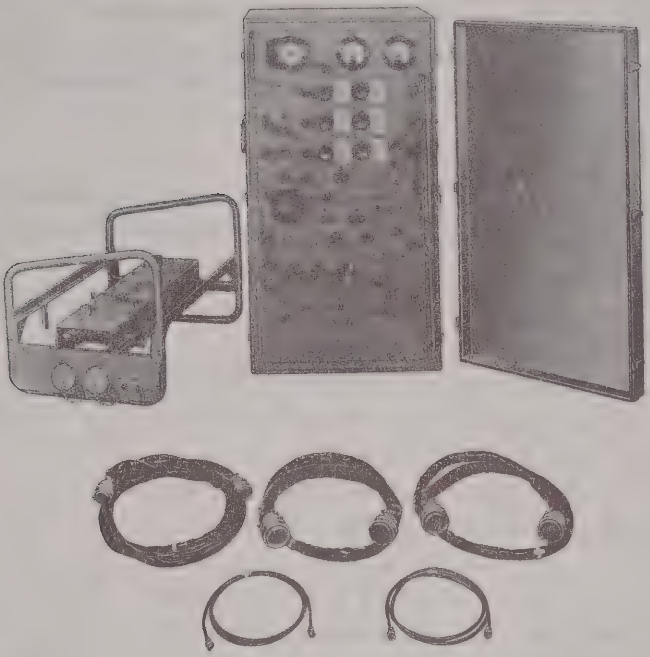
No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Over-all Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

TEST ADAPTER AN/GPM-12

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Over-all Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Test Adapter AN/GPM-12		7CAC-002902				
	Including:						
1	Apparatus Panel Test Set GS-15048			21	12	18-1/4	70.75
1	Test Jig GS-15105			18-1/4	9	4-1/2	20.38
2	Test Cable BO-711587			40 long			0.25
1	Power Cable BO-711575			76 long			0.63
1	Power Cable BO-711577			72 long			0.88
2	Test Cable BR-711586			72 long			2
1	Test Cable BO-717557			42 long			3.5
1	Test Cable BO-717558			42 long			2.5
1	Test Cable BR-717559			72 long			3.5
1	Test Cable BO-717560			50 long			2.5
1	Test Cable BL-717556			36 long			0.25

TEST ADAPTER AN/GPM-13



FUNCTIONAL DESCRIPTION:

A portable, special purpose equipment used to permit complete checking of performance characteristics of all subassemblies of Amplifier Unit AM-116/APA-44, ncluding: gain and phase, timing and amplitude measurements, checking of relay circuits, synchros, and the range mark generator. This equipment also supplies proper voltages and signals for other tests. It is used in depot testing. Indicators nclude AC and DC voltmeters, a null indicating microammeter, several calibrated control knobs, a special magnetic variation indicator calibrated in mechanical degrees, and several indicator lamps.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The following test circuits are provided: driver; azimuth mark, heading, and roll correction; triangle solver; cross level amplifier; release

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.	Alternate Standard		
STOCK NOS.	7CAC-801319-2123		
PROCUREM'T INFO.:			
PROCUREM'T COG.: USAF		DESIGN COG.: USAF, Arm.	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.3	
- Electronics Test Equipment -		AN/GPM-13	

is project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U.S.A.

TEST ADAPTER AN/GPM-13

ELECTROMECHANICAL DESCRIPTION: (Continued)
amplifier; tracking proportioner; range mark generator calibrator; and range mark generator. Much of the testing is accomplished with the aid of voltage divider networks. These networks are calibrated against an accurate voltage divider which is mounted with its controls accessible from the front panel of the amplifier components test set.

Power Supply:

115 volts, AC, 60 cycles per second, single phase, 1 ampere.

115 volts, AC, 400 cycles per second, single phase, 4 amperes.

+28 volts, DC, 5 amperes.

+300 volts, DC, +150 volts, DC, -150 volts, DC, and two 60 volt, AC, 350 cycles per second, voltages 180° out of phase.

All supplied by Power Distribution Set AN/GPM-9.

Temperature Range: 0°C. (+32°F.) to +45°C. (+113°F.), operational; -65°C. (-85°F.) to +85°C. (+185°F.), storage.

Relative Humidity: Up to 95% operational and storage.

Altitude Range: Up to 50,000 feet non-operational.

MANUFACTURERS' OR CONTRACTORS' DATA:

Western Electric Company, 120 Broadway, New York, New York; USAF Contract AF 33(038)-7414; Western Electric Spec. GS-15325; Drawing Index BB-745279; Approximate Cost per Unit, $13,000.00.

TUBE COMPLEMENT:

5 JAN-12AT7, 2 JAN-6AR6.

REFERENCE DATA AND LITERATURE:

TO 33AA1-3-1 (Operation and Maintenance Instructions).

SHIPPING DATA:

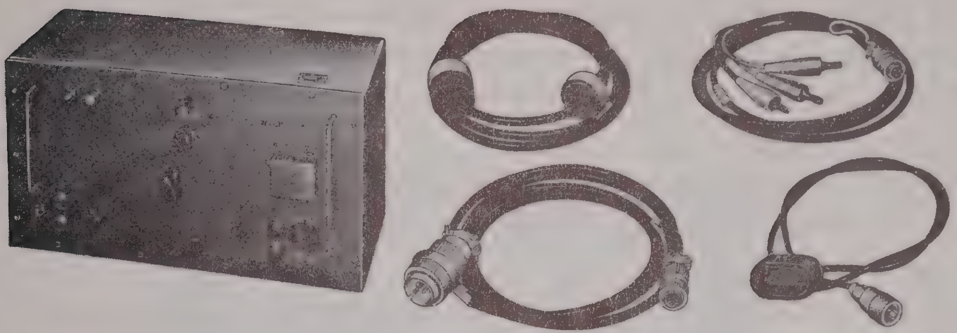
No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Over-all Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

TEST ADAPTER AN/GPM-13

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Over-all Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Test Adapter AN/GPM-13 Including:	Aluminum	7CAC-801319-2123	36-3/8	19-7/8	17-3/8	280
1	Test Fixture GS-15106			14-7/8	17-1/4	29-3/16	
1	Range Mark Generator Calibrator GS-15040						
1	Amplifier Components Test Set GS-15042						
1	Cable BR-711583			66 long			
1	Cable BR-711584			66 long			
2	Cable BO-711585			72 long			
1	Cable BR-711574			72 long			

ELECTRICAL POWER TEST SET AN/USM-20



FUNCTIONAL DESCRIPTION:

A portable, special purpose test set used for measuring the frequencies of the 100 and 350 cycle oscillators in the AN/APA-44 Ground Position Indicator. In addition, the set measures percentage of distortion and the amount of unbalance between the two phases of the oscillator output. These measurements may be made with the oscillator output unloaded or artificially placed under four different load conditions. A Wein bridge circuit is utilized to attenuate sharply the fundamental frequency at resonance. The voltage output of the bridge is read from an external VTVM as the bridge capacitance is varied. When a null is reached, the frequency can be read from the variable capacitor control which is calibrated directly. At the same time, the percentage of distortion can be read on the meter as the VTVM indicates only the second and higher harmonics under this condition.

RELATIONSHIP TO OTHER EQUIPMENT:

Similar to Western Electric Company GS-15328.

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The test set contains a frequency standard circuit controlled by a 1400 cps crystal oscillator. Frequency division is produced by two pentode stages following the oscillator so that a 350 cps output is available for calibrating the bridge circuit. A thermostatic switch controls the application of power to two resistors which keep the shielded bridge circuit at a constant temperature. Power is supplied by a self-contained voltage regulated power supply.

Power Supply: 110 volts, AC, 60 to 1200 cycles per second, single phase, 2 amperes.

Frequency Range: 95 to 105 cycles per second and 340 to 360 cycles per second.

Harmonic Distortion: For 100 cps oscillator: less than 10%.
For 350 cps oscillator: less than 0.5%.

Accuracy of Internal Frequency Standard: ±0.03%.

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.	Alternate Standard		
STOCK NOS.	7CAC-801318-5648		

PROCUREM'T INFO.:

PROCUREM'T COG.: USAF — DESIGN COG.: USAF, Arm.

F.I.I.N.: — FUNCTIONAL CLASS. NO.: 10.3

e project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

ELECTRICAL POWER TEST SET AN/USM-20

ELECTROMECHANICAL DESCRIPTION: (Continued)
Temperature Limits: 0°C. to +45°C., operational; -65°C. to +85°C., storage.
Relative Humidity: Up to 95%, operational and storage.
Altitude Range: Up to 10, 000 feet, operational; up to 50, 000 feet, storage.

MANUFACTURERS' OR CONTRACTORS' DATA:

Western Electric Company, 120 Broadway, New York, New York; Contract A 33(038)7414. Drawing Index BB-745282.

TUBE COMPLEMENT:

5 JAN-6AK5, 1 JAN-2C51, 2 JAN-6AS6, 1 JAN-5Y3, 1 JAN-6AR6, 1 JAN-OB 1 GA-50142 (Crystal oscillator).

REFERENCE DATA AND LITERATURE:

33D7-6-4-1 (Operation and Maintenance Instructions).

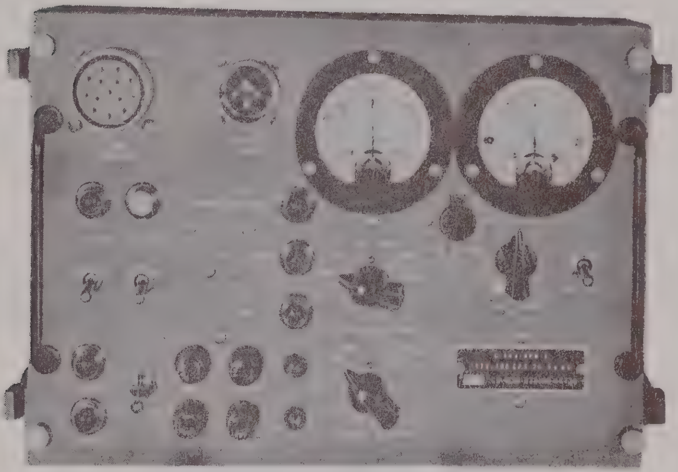
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu.Ft.)	Overall Dimensions (inches)			Weigh Packe (Lbs.
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock (USAF) Numbers (Navy) (Army)	Overall Dimensions (inches)			Weigh (Lbs.
				H	W	D	
1	Electrical Power Test Set AN/USM-20 (GS-15328)	Aluminum	7CAC-801318-5648	11-1/2	10-3/4	17-3/4	15
	Including:						
1	Harmonic and Frequency Meter GS-15037						
1	Power Cable BO-711522-2						
1	Test Cable BL-711570						
1	Test Cable BL-711571						
1	Test Cable BL-717240						

CONTROL C-463/APG-3
(CONTROL, RADAR SET, C-463/APG-3)



UNCTIONAL DESCRIPTION:

A portable, special purpose unit used as an auxiliary control box to facilitate
nch testing of a radar set. It allows alignments of range voltage without a com-
ter. Indication is by special markings for switch positions on the control with one
al calibrated in yards, and another used as a balance indicator. This unit is used
organizational, field and depot testing.

ELATIONSHIP TO OTHER EQUIPMENT:

This unit is used in testing Radar Sets AN/APG-3, 32, and 41, and Fire Control
stems A-5 and MD-1.

LECTROMECHANICAL DESCRIPTION:

rcuit Information: This unit consists of power control circuits and a bridge cir-
cuit. The power control circuits place the radar set in OFF, STAND-BY, and

(Continued)

	AIR FORCE	NAVY	ARMY
YPE CLASS.	Standard		
TOCK NOS.	7CAC-224123-5		

ROCUREM'T INFO.: USAF Spec. MIL-C-7371, 22 Oct '51;Dwg. 47D41724 & 25

ROCUREM'T COG.: USAF DESIGN COG.: USAF, Arm

.I.I.N.: FUNCTIONAL CLASS. NO.: 10.3

project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

CONTROL C-463/APG-3
(CONTROL, RADAR SET, C-463/APG-3)

ELECTROMECHANICAL DESCRIPTION: (Continued)

RADAR conditions when properly connected into the radar system. These circuits also represent ON TARGET and FIRE conditions. The bridge circuit provides a means of balancing the radar range voltages so that they can be accurately aligned.

Power Supply: 115 volts, AC, 400 cycles per second and 26.5 volts, DC, line voltages. 3.0 volts, DC, supplied by two Batteries, BA-30 (1.5 volts) for the bridge circuit.

Calibration Ranges: 250, 500, 1000, 1500, 2000 yards.

Calibration Deviation: ±50 yards.

Calibration Accuracy: ±0.5%.

Temperature Ranges: -55° C. to +55° C.

MANUFACTURERS' OR CONTRACTORS' DATA:

General Electric Company, Schenectady, New York; USAF Contract No. W-33-038-ac-14739, Contract AF 33(038)12610, 15 May 1950; Approximate Cost per Unit, $177.00.

Dynamics Electronics, Glendale, Long Island, New York; Contract No. AF 33(600) 20215, 24 June 1952; Approximate Cost per Unit, $171.00.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 16-30APG3-6 (Operating Instructions - AN/APG-3).

TO 16-30APG3-7 (Maintenance Instructions - AN/APG-3).

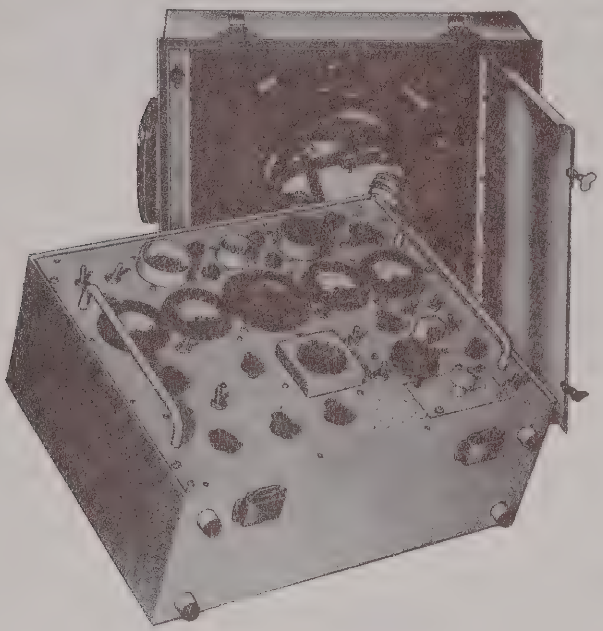
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Control C-463/APG-3	Aluminum	7CAC-224123-5	5	14-15/16	9-3/4	8.5
1	Cover	Aluminum			14-15/16	9-3/4	

FIELD TEST SET G-3
(TESTER, GUN-BOMB-ROCKET SIGHT)



FUNCTIONAL DESCRIPTION:

A portable, field type tester used to perform a system test of the Type A1, A4, and A7 Gyro Computing Sights which are part of the MA-2 Fire Control System. This tester permits manual control of the switching operations necessary in checking the individual components of the sight. The equipment contains meters for measuring AC and DC current, frequency, AC and DC voltage, and a stop watch for making characteristic time checks.

RELATIONSHIP TO OTHER EQUIPMENT:

This equipment is very similar to Sperry Part No. 1000012.

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The circuits in this tester are designated to isolate and check the individual circuits of the computing sight. An AC milliammeter measures the microsyn excitation current. A vibrating reed frequency meter indicates the momentary input frequency of the AC supply. Meters and connectors make

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-806607		
PROCUREM'T INFO.: Exhibit WGE 131, January 1952			
PROCUREM'T COG.: USAF	DESIGN COG.: USAF, Arm.		
F.I.I.N.:	FUNCTIONAL CLASS. NO.: 10.3		
- Electronics Test Equipment -			G-3

is project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

FIELD TEST SET G-3
(TESTER, GUN-BOMB-ROCKET SIGHT)

ELECTROMECHANICAL DESCRIPTION: (Continued)
it possible to check voltages between all points of the sight and ground. Circuits are also included for opening the computer stiffness and sight head torque meter circuits and for controlling the displacement of the target index.

Power Supply: 28 volts, 3-phase, AC; 28 volts, DC; 300 volts, DC.

Meter Calibrations:
- AC Current: 0 to 300 milliamperes.
- DC Current: 0 to 100 milliamperes.
- AC Voltage: 0 to 35 volts.
- DC Voltage: 0 to 500 volts.
- Frequency: 380 to 420 cycles per second.
- Time: 0 to 10 seconds calibrated in 0. 1-second intervals.
  0 to 10 minutes calibrated in 10-second intervals.

MANUFACTURERS' OR CONTRACTORS' DATA:
Telectro Industries Corporation, 35-16 37th Street, Long Island City 1, New York.

TUBE COMPLEMENT:
1 Telectro Type TT-258 Voltage Reference Tube.

REFERENCE DATA AND LITERATURE:
TO 33D5-9-4-1 (Operation and Service Instructions).

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Over-all Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

FIELD TEST SET G-3
(TESTER, GUN-BOMB-ROCKET SIGHT)

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Over-all Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Field Test Set G-3		7CAC-806607	14-3/4	19	15-3/4	40
1	Transit Case	Sheet Metal					
3	Inter-connecting Cable			144 long			
1	Adapter Cable			48 long			
1	Power Cable			144 long			

AZIMUTH INDICATOR ID-253/GRD

UNCTIONAL DESCRIPTION:

A portable, special purpose set used in aligning phase inverters to give proper alance, and used in monitoring radar sets. Indication is on a dial calibrated in echanical degrees. It is used in organizational, field, and depot maintenance.

ELATIONSHIP TO OTHER EQUIPMENT:

This equipment is used in testing Direction Finder Groups AN/GRA-7 and 8 and irection Finding Kit MX-536/GRD.

LECTROMECHANICAL DESCRIPTION:

ircuit Information: The equipment contains a built-in power supply, amplifier, and component bearing indicator. The azimuth indicator amplifies the 30 cycle sine wave voltage received from the power amplifier into a properly timed pulse. The 30 cycle sine wave is then passed through a clipper circuit which shapes the sine wave into a trapezoidal pulse form. This pulse is amplified and differentiated into a narrow pulse. The pulse is further amplified and fed to the miniature bearing indicator where it fires the azimuth bearing indicator, thus indicating bearing of the aircraft.

(Continued)

	AIR FORCE	NAVY	ARMY
YPE CLASS.			
TOCK NOS.	1700-017565720		
ROCUREM'T INFO.:			
ROCUREM'T COG.: USAF		DESIGN COG.: USAF, Rome	
.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.3	
	- Electronics Test Equipment -		ID-253/GRD

roject was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

AZIMUTH INDICATOR ID-253/GRD

ELECTROMECHANICAL DESCRIPTION: (Continued)
Power Supply: 117 volts, AC, 60 cycles per second, single phase.
Calibrated Range: 0 to 360°.

MANUFACTURERS' OR CONTRACTORS' DATA:

Federal Telecommunications Laboratory, 500 Washington Avenue, Nutley, New Jersey; USAF Contract W-33-038-ac-21373.

TUBE COMPLEMENT:

1 JAN-12AT7, 2 JAN-6AQ5, 1 JAN-6AU6, 1 JAN-12AU7, 2 JAN-12AX7, 1 JAN-2D21, 1 JAN-5R4WGY.

REFERENCE DATA AND LITERATURE:

TO 16-30GRA7-12 (Service Instructions for AN/GRA-7).
TO 16-30GRA7-12 (Overhaul Instructions for AN/GRA-7).
TO 16-35MX536-21 (Operation Instructions for MX-536/GRD).
TO 16-35MX536-22 (Service Instructions for MX-536/GRD).
TO 16-35MX536-23 (Overhaul Instructions for MX-536/GRD).

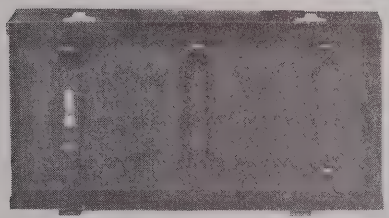
SHIPPING DATA:

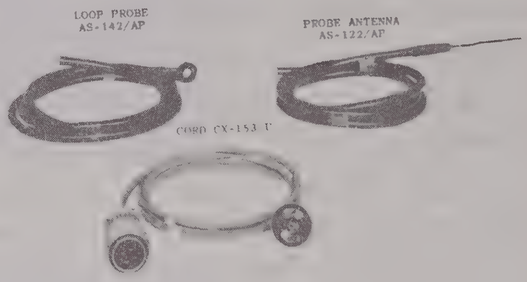
No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Over-all Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Azimuth Indicator ID-253/GRD, Including:	Wood	1700-017565720	17	9-3/4	23	
1	Indicator Miniature Bearing			3	4 dia.		
1	Amplifier			12	8-3/4	19	
1	Cable Assembly			180 long			
1	Indicator Cable			72 long			
1	Case	Wood		17-3/4	10	23-3/8	
						Total:	45

AMPLIFIER ALIGNMENT UNIT TS-92/AP
(TEST SET, RADAR, TS-92/AP)





FUNCTIONAL DESCRIPTION:

A portable test equipment used when readjusting the response curve of broadband amplifiers for bandwidths between 0.5 and 7.0 megacycles. Relative response is indicated by a 0 to 1 milliammeter located on the front panel.

RELATIONSHIP TO OTHER EQUIPMENT:

Replaced by TS-668/AP Alignment Tester.

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: A source of random noise is fed into the amplifier under test and the amplifier output used to modulate a radiated carrier.

Various frequency-components from the amplifier under test are picked up by either the antenna probe or loop probe and enter the alignment unit through a "radio frequency input" terminal on the front panel. The signal passes into a crystal rectifier and on through a low pass filter where only those frequencies below 15 megacycles per second are passed on to an oscillator mixer circuit and intermediate frequency amplifier in a conventional superheterodyne system. The output from these circuits is fed to a peak signal vacuum tube indicator.

Power Supply: 115 volts, AC, 50 to 1200 cycles per second, single phase, 0.5 amperes.

Frequency Range: 15 to 500 megacycles per second (radio frequency input).

Bandwidth: 0.5 to 7.0 megacycles per second.

Meter Calibration: 0 to 1 milliampere.

	AIR FORCE	NAVY	ARMY
TYPE CLASS.	Limited Standard		
STOCK NOS.	7CAC-801319-2154	ASO-R16-AN-TS-92/AP	3F4325-92
PROCUREM'T INFO.: USAF Spec. No. 71-5082			
PROCUREM'T COG.: USAF	DESIGN COG.: USAF, ARL		
F.I.I.N.:	FUNCTIONAL CLASS. NO.: 10.3		
- Electronics Test Equipment -			TS-92/AP

is project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

AMPLIFIER ALIGNMENT UNIT TS-92/AP
(TEST SET, RADAR, TS-92/AP)

MANUFACTURERS' OR CONTRACTORS' DATA:

Hudson American Corporation, 25 W. 43rd Street, New York, New York; Order Nos. 688-DAY-44, 28 November 1944, and 1499-DAY-44, 30 September 1944, Approximate Cost per Unit, $467.46; Order Nos. 1089-45-SP, 31 March 1945, Approximate Cost per Unit, $450.00.

TUBE COMPLEMENT:

1 JAN-6SA7, 2 JAN-6AC7, 1 JAN-6H6, 1 JAN-6J5, 1 JAN-5Y3-GT/G, 1 JAN-1N21B (Crystal).

REFERENCE DATA AND LITERATURE:

TO 16-35TS92-2 (Maintenance Instructions).
TO 16-55-95 (Spare Parts List).

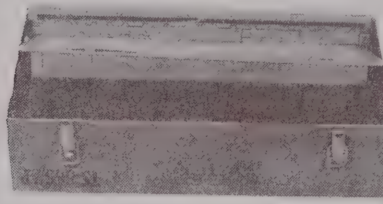
SHIPPING DATA:

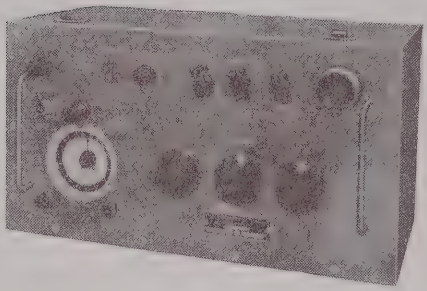
No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
1	Amplifier Alignment Unit, TS-92/AP, with accessories (Shelf Package - Water-Resistant Carton)	1.94	20	12	14	31

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Amplifier Alignment Unit TS-92/AP	Steel	7CAC-801319-2154 R16-AN-TS-92/AP 3F4325-92	16-1/2	7-3/4	8-1/4	20
1	Cord CY-153/U		1690-324759890 3E6000-153-72	72 long			0.750
1	Probe Antenna AS-122/AP		7CAC-170265-23 3F4043-122	72 long			0.750
1	Loop Probe AS-142/AP		7CHA-AS142-AP 3F4043-142	72 long			0.750
1	Cable Adapter AN3057-12		6500-000357 2Z2636-3	1-9/16 long	1-3/16 dia.		0.061
1	Case CY-150/AP						
1	Instruction Manual						

COMPUTER CALIBRATOR TS-666/AP
(CALIBRATOR, COMPUTER, TS-666/AP)





UNCTIONAL DESCRIPTION:

A portable, specialized test set used to test and adjust Ground Position Indicator N/APA-44, by comparing a known reference voltage with the voltage under test. his is done by interposing a zero-center microammeter and a calibrated voltage ivider between the two voltages. The voltage divider controls are rotated until a ull indication is obtained on the microammeter, and the ratio between the two voltges read from the calibrated voltage divider knobs, in terms of parts in 10,000.

ELATIONSHIP TO OTHER EQUIPMENT:

LECTROMECHANICAL DESCRIPTION:

ircuit Information: Consists of a precision voltage divider and zero-center meter. DC measurements are made directly to the meter through multiplier and voltage divider resistors, while AC measurements are made to the meter through a vacuum tube amplifier circuit which increases the magnitude of the voltage, rectifies it and compensates for amplifier phase shift before it reaches the meter terminals.

ower Supply: 26.5 volts DC; +300 volts DC; +150 volts DC; -150 volts DC and 120

(Continued)

	AIR FORCE	NAVY	ARMY
YPE CLASS.	Limited Standard		
OCK NOS.	7CAC-801318-532		3F4325-666
ROCUREM'T INFO.:	USAF Spec. No. D-154179		
ROCUREM'T COG.:	USAF	DESIGN COG.: USAF, Arm.	
I.I.N.:		FUNCTIONAL CLASS. NO.: 110.3	

- Electronics Test Equipment - TS-666/AP

oject was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U.S.A.

COMPUTER CALIBRATOR TS-666/AP
(CALIBRATOR, COMPUTER, TS-666/AP)

ELECTROMECHANICAL DESCRIPTION: (Continued)

volts AC single phase, 350 cycles per second all supplied by Ground Position Indicator AN/APA-44 through Junction Box J-166/APA-44.

Measuring Range: Ratios from 1:1 to 10,000:1.

Reference Voltage: +150 volts DC and 350 volts AC externally supplied.

Accuracy: 0.01%.

Temperature Range: -40° C. to +71° C.

Meter Calibration: 100 to 0 to 100 microamperes DC.

MANUFACTURERS' OR CONTRACTORS' DATA:

Western Electric Company, 120 Broadway, New York, New York; USAF Contract No. W 33(038)-ac-15018, AF 33(038)11218, AF 33(038)14537, AF 33(038)27326; 20 February 1950, Approximate Cost per Unit, $1055.63.

TUBE COMPLEMENT:

1 JAN-6SJ7GT, 3 JAN-6SU7GTY, 1 JAN-12AU7.

REFERENCE DATA AND LITERATURE:

TO 16-35TS666-3 (Maintenance Instructions).
TO 16-35TS666-4 (Parts Catalog).

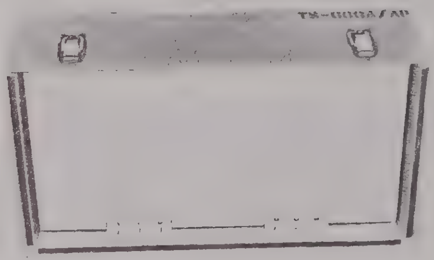
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
1	Computer Calibrator TS-666/AP	2.46	20	12-1/2	17	60

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Computer Calibrator TS-666/AP	Metal	7CAC-801318-532 3F4325-666	17-3/4	10-3/4	11-1/2	
1	Cable CX-1148/U			64-1/8 long	1/2 dia.		
1	Cable CG-641/U			64-1/8 long			
1	Cable CG-564/U			64-1/8 long			
						Total:	25.5

COMPUTER CALIBRATOR TS-666A/AP



FUNCTIONAL DESCRIPTION:

A portable specialized test set used to test and adjust Ground Position Indicator AN/APA-44, by comparing a known reference voltage with the voltage under test. This is done by interposing a zero-center microammeter and a calibrated voltage divider between the two voltages. The voltage divider controls are rotated until a null indication is obtained on the microammeter. The ratio between the two voltages is read from the calibrated voltage divider knobs in terms of parts in 10,000.

RELATIONSHIP TO OTHER EQUIPMENT:

Similar to TS-666/AP except for circuitry differences.

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: Consists of a precision voltage divider and zero-center meter. DC measurements are made directly to the meter through multiplier and voltage divider resistors. AC measurements are made to the meter through a vacuum tube amplifier circuit which increases the magnitude of the voltage, rectifies it, and compensates for amplifier phase shift before it reaches the meter terminals.

Power Supply: +26.5 volts DC; +300 volts DC; +150 volts DC; -150 volts DC; and 120 volts AC, single phase, 350 cycles per second all supplied by Ground Position Indicator AN/APA-44 through Junction Box J-166/APA-44.

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.	Standard		
STOCK NOS.	7CAC-170275-9624		3F4325-666A

PROCUREM'T INFO.: Spec. D-154179

PROCUREM'T COG.: USAF

DESIGN COG.: USAF, WADC, Arm.

F.I.I.N.:

FUNCTIONAL CLASS. NO.: 10.3

- Electronics Test Equipment -

TS-666A/AP

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

COMPUTER CALIBRATOR TS-666A/AP

ELECTROMECHANICAL DESCRIPTION: (Continued)
Measuring Range: Ratios from 1:1 to 10,000:1.
Reference Voltage: +150 volts DC and 350 volts AC externally supplied.
Accuracy: 0.01%.
Temperature Range: -40°C. (-40°F.) to +71°C. (+160°F.).
Meter Calibration: 100 to 0 to 100 microamperes DC.

MANUFACTURERS' OR CONTRACTORS' DATA:

Telectro Industries Corporation, 35-16 37th Street, Long Island City, New York; Part No. TA-322; USAF Contract No. AF 33(604)6331.

TUBE COMPLEMENT:

1 JAN-6SJ7GT, 1 JAN-6SU7GT, 2 JAN-6SN7GT.

REFERENCE DATA AND LITERATURE:

TO 33A1-12-61-11 (Operation Instructions).
TO 33A1-12-61-12 (Service Instructions).

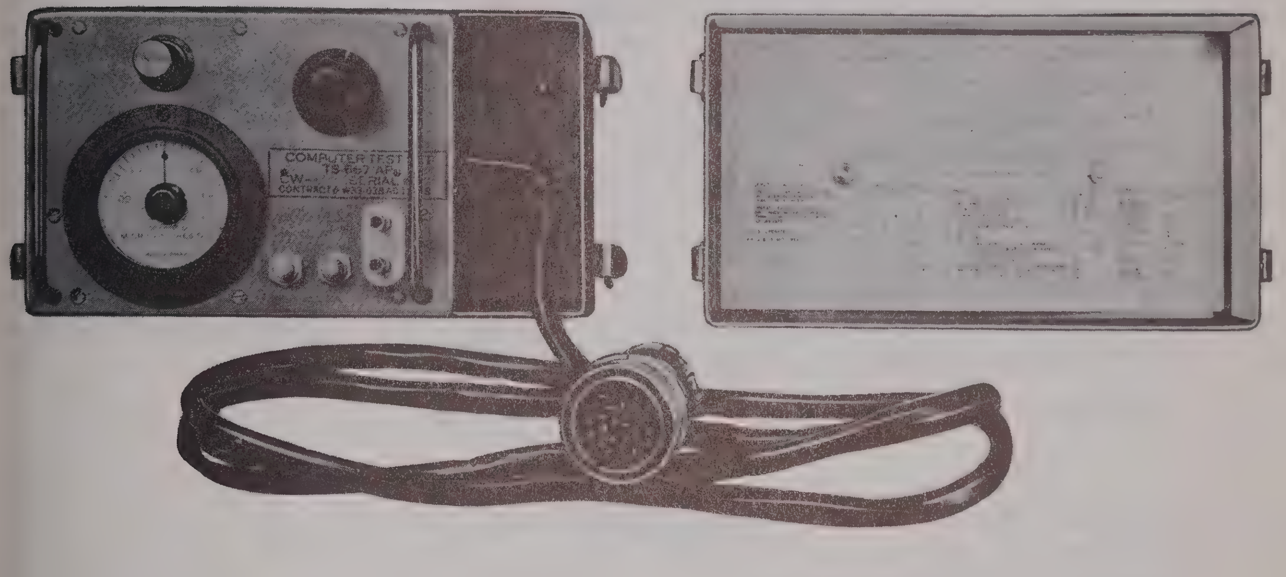
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
1	Computer Calibrator TS-666A/AP	2.46	20	12-1/2	17	60

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Computer Calibrator TS-666A/AP	Aluminum	7CAC-170275-9624 3F4325-666A	17-3/4	10-3/4	11-1/2	24.5
1	Cable CX-1148/U			72 long			
1	Cable CG-641/U			60 long			
1	Cable CG-564/U			60 long			

COMPUTER TEST SET TS-667/AP
(CALIBRATOR, COMPUTER, TS-667/AP)



FUNCTIONAL DESCRIPTION:

A portable, specialized test set used to test and adjust Ground Position Indicator AN/APA-44, by making voltage checks utilizing a null indicator or a direct reading meter. The null indication circuit functions as a bridge circuit, balancing a known reference voltage in the test set against an unknown test voltage from Ground Position Indicator AN/APA-44. The test set meter may be used in conjunction with series resistors for making direct voltage readings.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: Consists of a microammeter and a network of resistors that may be connected by means of a rotary switch into a Wheatstone bridge circuit for null indications or into a simple series circuit for direct reading measurements.

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.	Substitute Standard		
STOCK NOS.	7CAC-801318-542		3F4325-667

PROCUREM'T INFO.:

PROCUREM'T COG.: USAF   DESIGN COG.: USAF, Arm.

F.I.I.N.:   FUNCTIONAL CLASS. NO.: 10.3

- Electronics Test Equipment -   TS-667/AP

is project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

COMPUTER TEST SET TS-667/AP
(CALIBRATOR, COMPUTER, TS-667/AP)

ELECTROMECHANICAL DESCRIPTION: (Continued)

Power Supply: 26.5 volts,DC,at 0.5 amperes supplied by AN/APA-44 through Junction Box J-166/APA-44.

Test Voltage Range: 0 to 0.35 volts (root mean square), AC, 400 cycles per second; 0 to 400 volts,DC.

Accuracy: Position "1" Air Speed (S): 300 knots ±0.2%.
Position "2" N-S Wind (Wr): 0 knots ±0.2%.
Position "3" E-W Wind (We): 0 knots ±0.2%.
Position "4" N-S Wind (Wr): 103.620 knots ±0.2%.
Position "9" ±2% of voltage.

Temperature Range: -29° C. to +54° C.

MANUFACTURERS' OR CONTRACTORS' DATA:

Western Electric Company, 120 Broadway, New York, New York; Contract No. W 33(038)-ac-15018 and AF 33(038)11218, 20 February 1950; Approximate Cost per Unit, $229.70, AF 33(038)14537, AF 33(038)27326.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 16-35TS667-3 (Maintenance Instructions).
TO 16-35TS667-4 (Parts Catalog).

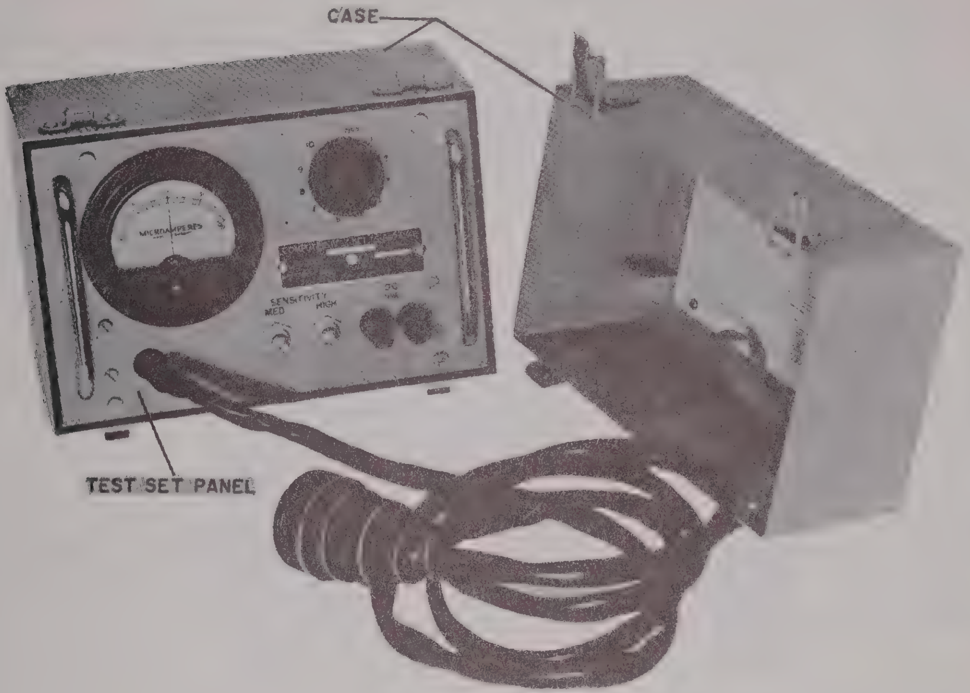
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
1	Computer Test Set TS-667/AP (Domestic Packed)	0.501	13	7	9.5	15

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Computer Test Set TS-667/AP (Complete)	Aluminum	7CAC-801318-542 3F4325-667	11	5-3/4	6-1/2	7.5

COMPUTER TEST SET TS-667A/AP



FUNCTIONAL DESCRIPTION:

A portable specialized test set used to test and adjust Ground Position Indicator AN/APA-44 by making voltage checks utilizing a null indicator or a direct reading meter. The null indication circuit functions as a bridge circuit, balancing a known reference voltage in the test set against an unknown test voltage from Ground Position Indicator AN/APA-44. The test set meter may be used in conjunction with series resistors for making direct voltage readings.

RELATIONSHIP TO OTHER EQUIPMENT:

Similar to Specialty Assembling and Packing Company Model 519. Similar to TS-667/AP except that the operational temperature range of TS-667A/AP is greater than that of the TS-667/AP and the panel arrangement has been changed.

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: Consists of a microammeter and a network of resistors that may be connected by means of a rotary switch into a Wheatstone bridge circuit for null indications or into a simple series circuit for direct reading measurements.

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.	Alternate Standard		
STOCK NOS.	7CAC-801318-5418		3F4325-667A

PROCUREM'T INFO.: USAF Exhibit WCE-279

PROCUREM'T COG.: USAF DESIGN COG.: USAF, Arm.

F.I.I.N.: FUNCTIONAL CLASS. NO.: 10.3

- Electronics Test Equipment - TS-667A/AP

is project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U.S.A.

COMPUTER TEST SET TS-667A/AP

ELECTROMECHANICAL DESCRIPTION: (Continued)

Power Supply: 26.5 volts DC at 0.5 amperes supplied by AN/APA-44 through Junction Box J-166/APA-44.

Test Voltage Range: 0 to 0.35 volts rms, AC, 400 cycles per second; 0 to 400 volts, DC.

Voltmeter Range: 0 to 1, 0 to 4, and 0 to 40 volts (zero center).

Accuracy: Position "1" Air Speed (S): 300 knots ±0.2%.
Position "2" N-S Wind (Wn): 0 knots ±0.2%.
Position "3" E-W Wind (We): 0 knots ±0.2%.
Position "4" N-S Wind (Wn): 103.620 knots ±0.2%.
Position "9" ±100 volts "Low Sensitivity": ±40 volts.
±100 volts "Medium Sensitivity": ±4 volts.
±100 volts "High Sensitivity": ±1 volt.

Temperature Range: -54°C. to +65°C., operational.

MANUFACTURERS' OR CONTRACTORS' DATA:

Specialty Assembling and Packing Company, Inc., Brooklyn, New York; Contract AF 33(604)5860, dated 25 March 1953; Approximate Cost per Unit, $85.00.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

33A1-12-63-1 (Operation and Service Instructions).
33A1-12-63-4 (Illustrated Parts Breakdown).

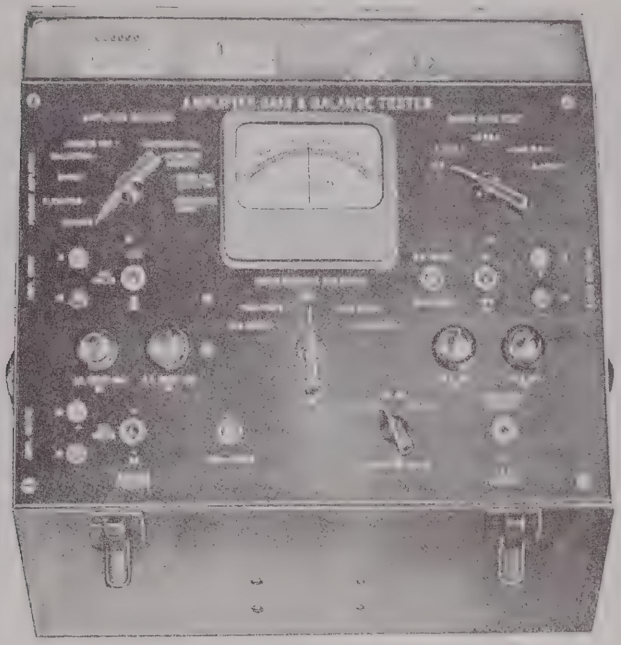
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
1	Computer Test Set TS-667A/AP					

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Computer Test Set TS-667A/AP (Complete)	Aluminum	7CAC-801318-5418 3F4325-667A	9	7-3/4	6	6

TESTER, AMPLIFIER GAIN AND BALANCE
Part No. 144D429G1
(General Electric Company)



FUNCTIONAL DESCRIPTION:

A portable instrument which is used to check the input and output voltages of amplifiers to facilitate adjustment of the gain and balance of the unit under test. The tester also provides a means of performing computer range-rate tests.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The tester consists of a selector switch for connecting the amplifier to be tested, and circuits for feeding known input voltages to the unit under test. Connections are provided for measuring the output voltage and polarity or the output current under load. A DC milliammeter is connected to terminal jacks on the tester to check azimuth and elevation precession channels of computer primary amplifiers for output current under load. To perform computer range-rate tests, the tester is used in conjunction with a Precision Voltage Tester (GE Part No. 144D428). Batteries inside this tester furnish operating power to the amplifier tester. The voltage tester is used to adjust the potentiometers of

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-801755		

PROCUREM'T INFO.:

PROCUREM'T COG.: DESIGN COG.: Commercial

F.I.I.N.: FUNCTIONAL CLASS. NO.: 10.3

- Electronics Test Equipment - G. E. 144D429G1

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TESTER, AMPLIFIER GAIN AND BALANCE
Part No. 144D429G1
(General Electric Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)

the amplifier tester and is then disconnected. A vacuum tube voltmeter is then attached and the amplifier tester energized. A motor driven potentiometer inside the tester applies a varying signal voltage to the unit under test and the unit is adjusted according to computer specifications.

Power Supply: 115 ±5 volts, AC, 380 to 420 cycles per second, three-phase;
115 ±5 volts, AC, 60 cycles per second, single-phase;
28 ±2.5 volts, DC.

Meter Range: 500-0-500 millivolts.

MANUFACTURERS' OR CONTRACTORS' DATA:

General Electric Company, 1 River Road, Schenectady, New York.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 33D5-2-3-1 (Operation and Service Instructions).
TO 33D5-2-3-4 (Parts Breakdown).

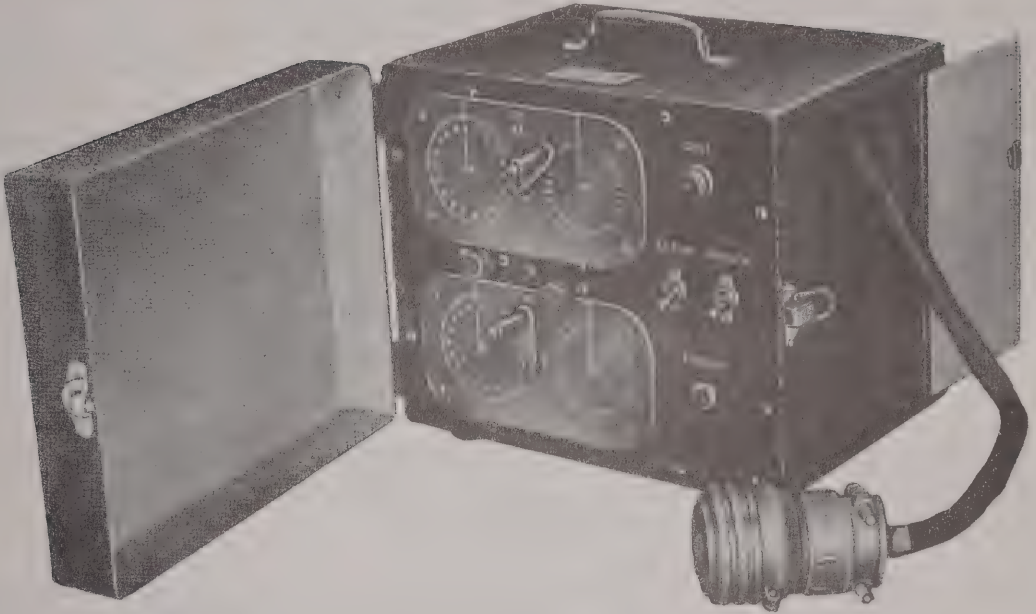
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Tester, Amplifier Gain and Balance (Gen. Elec. 144D429G1)	Aluminum	7CAC-801755	12	15	12	30
8	Cable Assembly						
1	Test Panel						
1	Power Outlet Box						

DUMMY DIRECTOR
Part No. 9076040G2
(General Electric Company)



FUNCTIONAL DESCRIPTION:

A portable special purpose test unit employed in servicing the B-47 armament systems. The equipment is used to set and check the turret limit switches, fire interrupter switches, contour follower limit switches, and to set the turret position accurately. Calibrated dials coupled to the dummy director selsyns provide a check of selsyn zeroing and an accurate means of determining turret position in azimuth and elevation.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The circuit contains three basic sections: the azimuth control, elevation control, and the firing control. The azimuth and elevation control sections are identical in operation and each consist of two selsyn generators mechanically coupled in tandem style. A dial is geared to each of the selsyn rotor shafts to indicate the position of the rotor and stator. When the rotors are energized by power from the turret-system power supply, the stator leads give an electrical signal indicative of the position of the selsyn rotor with respect to

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-274080		
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.3	
	- Electronics Test Equipment -		G. E. 9076040G2

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DUMMY DIRECTOR
Part No. 9076040G2
(General Electric Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)
the selsyn stator. The firing control section includes an action switch, two trigger switches connected in parallel, and an indicating lamp. The action switch supplies 28 volts, DC, to actuate the turret in both elevation and azimuth. The two trigger switches provide 28 volts, DC power, for the firing circuit and the indicating lamp provides an indication that the firing circuit is energized.

Power Supply: Electrical power for the operation of this test equipment is furnished by connection to the system under test.

MANUFACTURERS' OR CONTRACTORS' DATA:
General Electric Company, 1 River Road, Schenectady, New York.

TUBE COMPLEMENT:
None.

REFERENCE DATA AND LITERATURE:
TO 33D5-10-5-1 (Operation and Service Instructions).
TO 33D5-10-5-4 (Illustrated Parts Breakdown).

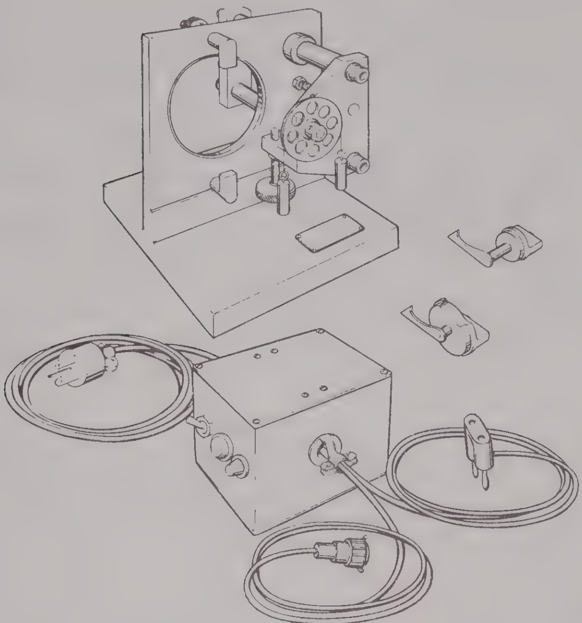
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Dummy Director (G. E. 9076040G2)		7CAC-274080	9	10-1/2	8-1/2	
1	Cable Assembly (Extension)			240 long			
1	Adapter Cable			24 long			

FIXTURE, BACKLASH CHECKING
TSY-7071
(General Mills, Inc.)



FUNCTIONAL DESCRIPTION:

A portable unit which is used in checking the backlash in the declination and auxiliary axis gear-drive assemblies of the type Y-2 and Y-4 Horizontal Periscopic Bombsight. It is used in conjunction with a standard vacuum tube voltmeter. A junction box with cables is furnished as part of the fixture.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: Consists of a bracket assembly for mounting the synchro gear drive assembly and a junction box for supplying voltages to the synchro and to the vacuum tube voltmeter. A pulley shaft with a screwdriver point passes through the mounting bracket and engages a slot in the synchro shaft. A length of cord, having a small weight at either end, is passed around the pulley. The pulley is rotated until the voltmeter indicates between 50 and 100 millivolts. A special gear lock is inserted into the gear box to engage a gear. Backlash is checked by lifting the weights alternately and recording voltmeter readings. The difference in voltmeter readings is a measure of total gear drive assembly backlash.

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.			
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.3	
- Electronics Test Equipment - General Mills TSY-7071			

his project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

FIXTURE, BACKLASH CHECKING
TSY-7071
(General Mills, Inc.)

ELECTROMECHANICAL DESCRIPTION: (Continued)
Power Supply: 115 volts, AC, 400 cycles per second to junction box.
115 volts, AC, 60 cycles per second to voltmeter.

MANUFACTURERS' OR CONTRACTORS' DATA:

General Mills Inc., Mechanical Division, 400 Second Avenue, South Minneapolis Minnesota; Contract No. AF 33(038)14786, July 1950; Approximate Cost per Unit $385.00.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 33D5-9-24-1 (Operation and Service Instructions).
TO 33D5-9-24-3 (Overhaul Instructions).
TO 33D5-9-24-4 (Parts Breakdown).

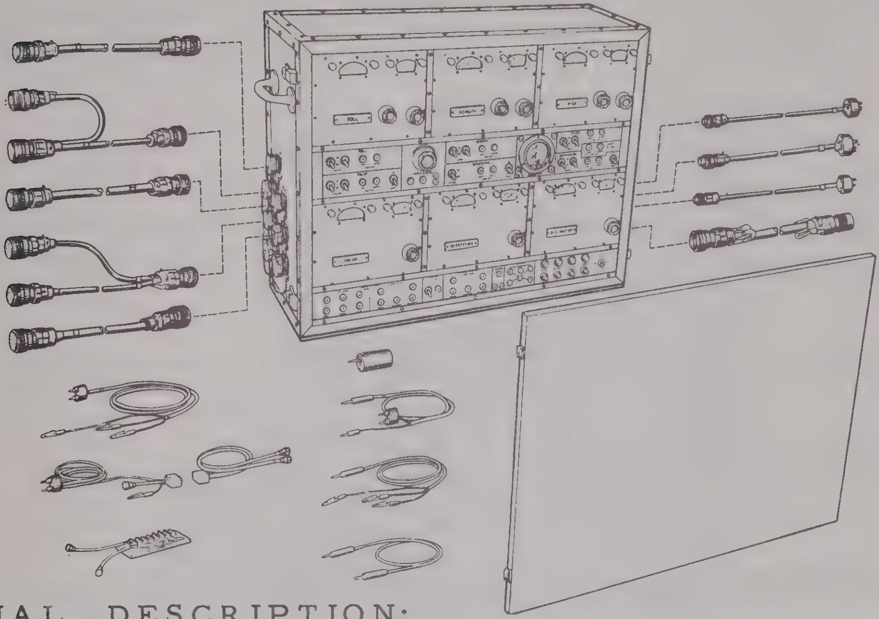
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
1	Fixture, Backlash Checking (General Mills TSY-7071)	4.17	15	24	20	37

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Fixture, Backlash Checking (General Mills TSY-7071)	Metal		8	7	8-1/2	23
2	Gear Lock			2	2	4	1
1	Junction Box			3-1/2	6	6	3

TESTER, COORDINATE CONVERTER
TSY-7107
(General Mills, Inc.)



FUNCTIONAL DESCRIPTION:

This test equipment provides a means for testing and aligning the type B-1 Coordinate Converter by supplying the azimuth, roll, and pitch + sighting angles, and indicating the output of the coordinate converter in polar, derotation, and declination angles. The tester may also be used to determine the overall error of the K-4 System from any position of the line of sight. Malfunctions of the coordinate converter may also be isolated with the aid of the tester.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The tester consists of six gear boxes and associated transmitter synchros. The transmitter synchros are electrically connected to appropriate receiver synchros in the coordinate converter under test. The desired azimuth, roll, and pitch + sighting angles are set up on the transmitter synchros by means of dials which control the gear boxes. The output of the coordinate converter is measured by means of the synchros which are driven to a null by the associated motors and gears. Indications of the polar, derotation, and declination angles are given by the dials attached to the gear boxes. Malfunctions are isolated by alternately connecting the actual input and output units to the coordinate conver-

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-802870		
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.3	
- Electronics Test Equipment -General Mills TSY-7107			

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TESTER, COORDINATE CONVERTER
TSY-7107
(General Mills, Inc.)

ELECTROMECHANICAL DESCRIPTION: (Continued)

ter while the tester acts as a dummy output and input, respectively.

Power Supply: 115 volts, AC, 400 cycles per second, 3 amperes;
115 volts, AC, 380 to 980 cycles per second, 3.5 amperes;
28 volts, DC, 2 amperes.

Meter Range: 100-0-100 microamperes.

MANUFACTURERS' OR CONTRACTORS' DATA:

General Mills Inc., Mechanical Division, 400 Second Avenue, South Minneapolis, Minnesota; Contract No. AF 33(038)14786, July 1950; Approximate Cost per Unit, $6920.00.

TUBE COMPLEMENT:

1 JAN 6AL5.

REFERENCE DATA AND LITERATURE:

TO 33D5-9-33-1 (Operation and Service Instructions).
TO 33D5-9-33-4 (Parts Breakdown).

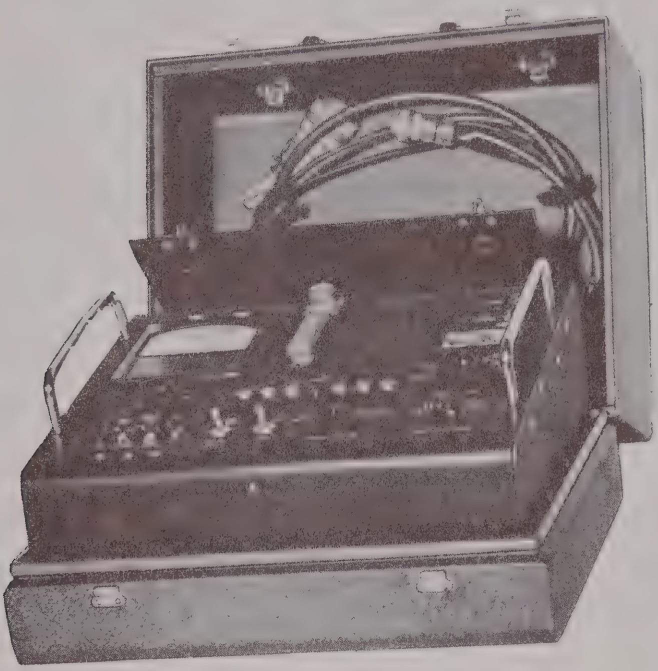
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
1	Tester, Coordinate Converter (General Mills TSY-7107)	15	36	40	18	320

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Tester, Coordinate Converter (General Mills TSY-7107)	Metal	7CAC-802870	24-1/2	36-1/2	12	138
6	Interconnecting Cable Assy.						14
3	Power Cable Assembly						2
6	Patch Cord						2
1	Patch Cord and Terminal Block Assy.						1

TESTER, SERVO AMPLIFIER
(TESTER, AMPLIFIER, SERVO)
Part No. TSY-7112
(General Mills, Inc.)
(International Business Machines Corporation)



FUNCTIONAL DESCRIPTION:

This is a portable test instrument used to test the type L 1 Servo Amplifier used in the type A-1 Coordinate Converter Amplifier and Power Supply. This tester can be used in bench testing amplifiers or in field testing where the amplifier is installed in the aircraft.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The tester includes a meter circuit which is controlled by a four-position switch on the panel. This switch selects the desired scale on a multi-scale AC-DC voltmeter mounted on the panel. Functional checkout of the tester is accomplished by turning the selector switch to the desired voltage indi-

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-809664		

PROCUREM'T INFO.:
PROCUREM'T COG.: DESIGN COG.: Commercial
F.I.I.N.: FUNCTIONAL CLASS. NO.: 10. 3
- Electronics Test Equipment - General Mills TSY-7112

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TESTER, SERVO AMPLIFIER
(TESTER, AMPLIFIER, SERVO)
Part No. TSY-7112
(General Mills, Inc.)
(International Business Machines Corporation)

ELECTROMECHANICAL DESCRIPTION: (Continued)

cation and checking the voltage reading on the panel multi-scale voltmeter.

In checking the amplifier, the unit to be tested is connected to the receptacle on the tester panel. Various input voltages are applied to the amplifier by advancing the input selector control to the various desired positions. The tester meter then indicates the output voltage of the amplifier for each input. Oscilloscope jacks are included on the panel for checking waveform and parasitics.

Power Supply: 115 volts, AC, 400 cycles per second, single-phase, 3.0 amperes.
28 volts, DC, 0.7 amperes.
(When used for field testing, power is furnished by the aircraft.)

MANUFACTURERS' OR CONTRACTORS' DATA:

General Mills, Inc., Mechanical Division, Minneapolis 8, Minnesota, and International Business Machines Corporation, Poughkeepsie, New York.

TUBE COMPLEMENT:

1 JAN-5814WA, 1 JAN-6AS7G, 1 JAN-5651, 1 JAN-6147, 1 JAN-5749/6BA6WA, 1 JAN-5R4GY.

REFERENCE DATA AND LITERATURE:

TO 33D5-2-9-1 (Operation and Service Instructions).
TO 33D5-2-9-3 (Overhaul Instructions).
TO 33D5-2-9-4 (Parts Breakdown).

SHIPPING DATA:

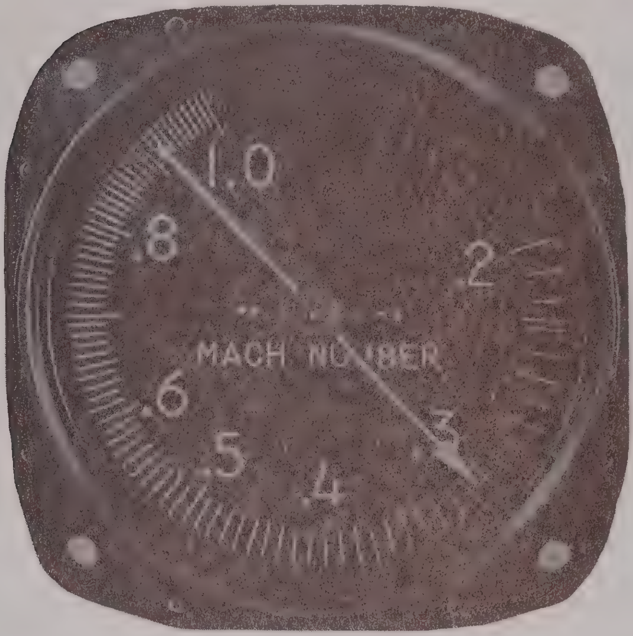
No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
General Mills TSY-7112 - Electronics Test Equipment -						

TESTER, SERVO AMPLIFIER
(TESTER, AMPLIFIER, SERVO)
Part No. TSY-7112
(General Mills, Inc.)
(International Business Machines Corporation)

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Tester, Servo Amplifier (General Mills and I. B. M. TSY-7112)		7CAC-809664				
1	Cable, Power						
1	Cable, Adapter						
1	Cable, Oscilloscope						

INDICATOR, MACH NUMBER, REPEATER
Part No. TE 5694
(Kollsman Instrument Corporation)



FUNCTIONAL DESCRIPTION:

This device is used to indicate the Mach number when testing the Mach number repeater of the C-2 True Airspeed and Mach Number Computer.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The indicator consists of a dial and an indicating pointer. The shaft which rotates the pointer is connected to the rotor of an internal synchro. Four leads terminate in an AN type connector which is used to connect the indicator to the computer.

Power Supply: The computer under test provides the power necessary to operate the indicator.

Dial Range: Mach 0.2 to Mach 1.0.

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	3340-063902460		
PROCUREM'T INFO.:		DESIGN COG.: Commercial	
PROCUREM'T COG.:		FUNCTIONAL CLASS. NO.: 10.3	
F.I.I.N.:			Kollsman TE 5694
	- Electronics Test Equipment -		

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INDICATOR, MACH NUMBER, REPEATER
Part No. TE 5694
(Kollsman Instrument Corporation)

MANUFACTURERS' OR CONTRACTORS' DATA:

Kollsman Instrument Corporation, 80-08 45th Avenue, Elmhurst 73, New York; Contract No. AF 33(600)27206; Contract Date, 20 May 1954; Approximate Cost per Unit, $125.00.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 5F5-3-5-3 (Overhaul Instructions).

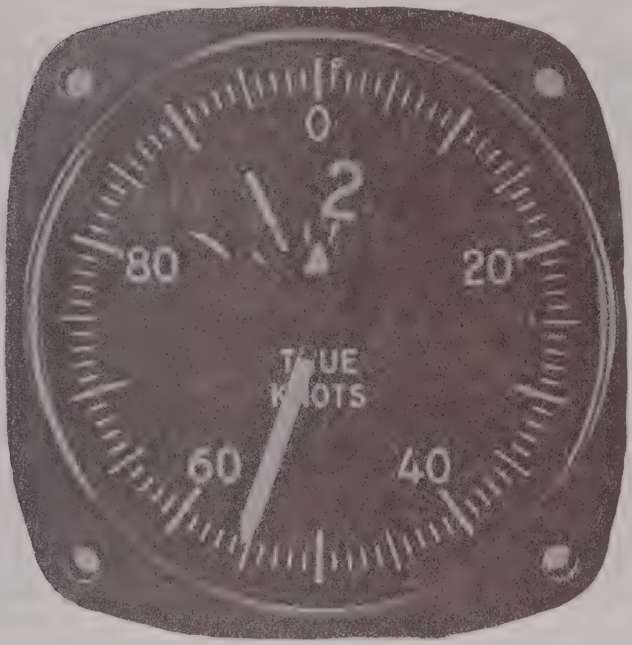
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
1	Indicator, Mach Number, Repeater (Kollsman TE 5694)	0.1	5	5	7	1-5/8

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Indicator, Mach Number, Repeater (Kollsman TE 5694)		3340-063902460	3-1/4	3-1/4	3-5/8	1-1/8

INDICATOR, TRUE AIRSPEED, REPEATER
Part No. TE 5696
(Kollsman Instrument Corporation)



FUNCTIONAL DESCRIPTION:

This device is used to indicate the true airspeed when testing the true airspeed repeater of the C-2 True Airspeed and Mach Number Computer.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The indicator consists of a dial which presents the subdial and pointer values of the computer. The indicating hand for the subdial reading is connected to the rotor of an internal subdial synchro. The indicating hand for the pointer reading is connected to the rotor of an internal pointer synchro. Seven leads terminate in an AN type connector which is used to connect the indicator to the computer.

Power Supply: The computer under test provides the power necessary to operate the indicator.

Dial Range: 0 to 1000 true knots.

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.			

PROCUREM'T INFO.:
PROCUREM'T COG.: DESIGN COG.: Commercial
F.I.I.N.: FUNCTIONAL CLASS. NO.: 10.3

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U.S.A.

INDICATOR, TRUE AIRSPEED, REPEATER
Part No. TE 5696
(Kollsman Instrument Corporation)

MANUFACTURERS' OR CONTRACTORS' DATA:

Kollsman Instrument Corporation, 80-08-45th Avenue, Elmhurst 73, New York; Contract No. AF 33(600)27206; 20 May 1954; Approximate Cost per Unit, $300.00.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 5F5-3-5-3 (Overhaul Instructions).

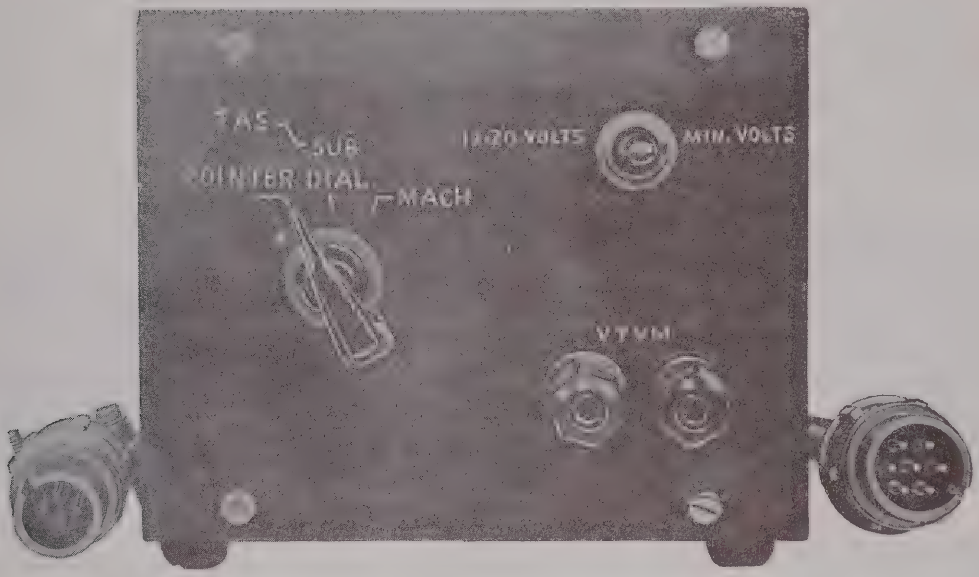
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
1	Indicator, True Airspeed, Repeater (Kollsman TE 5696)	0.1	5	5	7	2-1/2

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Indicator, True Airspeed, Repeater (Kollsman TE 5696)			3-1/4	3-1/4	4-1/4	1-7/8

SWITCH, ELECTRICAL ZERO CHECK
Part No. TE 5712
(Kollsman Instrument Corporation)



FUNCTIONAL DESCRIPTION:

This switch is used in checking the electrical zero of the true airspeed repeater subdial, the true airspeed repeater pointer, and the Mach number repeater. These are components of the C-2 True Airspeed and Mach Number Computer.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The panel of the test device mounts a 2-pole, 3-position selector switch for selecting the circuits of the TAS subdial repeater, the TAS pointer repeater, or the Mach number repeater. A double-pole, double-throw toggle switch on the panel connects a pair of VTVM jacks to the test circuit for external metering and measurement. Two AN type connectors connect the check switch to the computer component under test.

Power Supply: Power is furnished by the computer under test,

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-783200		

PROCUREM'T INFO.:

PROCUREM'T COG.: DESIGN COG.: Commercial

F.I.I.N.: FUNCTIONAL CLASS. NO.: 10.3

- Electronics Test Equipment - Kollsman TE 5712

is project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U.S.A.

SWITCH, ELECTRICAL ZERO CHECK
Part No. TE 5712
(Kollsman Instrument Corporation)

MANUFACTURERS' OR CONTRACTORS' DATA:

Kollsman Instrument Corporation, 80-08 45th Avenue, Elmhurst 73, New York; Contract No. AF 33(600)27206; Contract Date, 20 May 1954; Approximate Cost per Unit, $150.00.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 5F5-3-5-3 (Overhaul Instructions).

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
1	Switch, Electrical Zero Check (Kollsman TE 5712)	0.19	6	6	9	3

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Switch, Electrical Zero Check (Kollsman TE 5712)		7CAC-783200	5	4-1/4	6	1-3/4

SWITCH, SELECTOR
Part No. TE 5713
SWITCH, SELECTOR
Part No. TE 5714
(Kollsman Instrument Corporation)

FUNCTIONAL DESCRIPTION:

These switches are used in testing the C-2 True Airspeed and Mach Number Computer. They are designed to select the outputs of the true airspeed transmitting synchros. In addition, the TE 5714 is designed to select the outputs of the logarithmic absolute pressure transmitting synchros. The two switches are similar except that the TE 5713 is a 5-pole, 5-position switch and the TE 5714 is a 5-pole, 4-position switch.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The selector switch panel mounts a rotary switch which permits the selection of the desired synchros output. It also introduces into the test circuit a phase shift network incorporated in the selector switch circuit. Electrical connections to the computer are made through AN type connectors.

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-783660(5714)		
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.3	
	- Electronics Test Equipment -	Kollsman TE 5713, 14	

his project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A

SWITCH, SELECTOR
Part No. TE 5713
SWITCH, SELECTOR
Part No. TE 5714
(Kollsman Instrument Corporation)

ELECTROMECHANICAL DESCRIPTION: (Continued)

Power Supply: The Servo Amplifier TE 5710 supplies the power distributed by the selector switch.

MANUFACTURERS' OR CONTRACTORS' DATA:

Kollsman Instrument Corporation, 80-08 45th Avenue, Elmhurst 73, New York; Contract No. AF 33(600)27206, 20 May 1954; Approximate Cost per Unit, $ 150.00.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 5F5-3-5-3 (Overhaul Instructions).

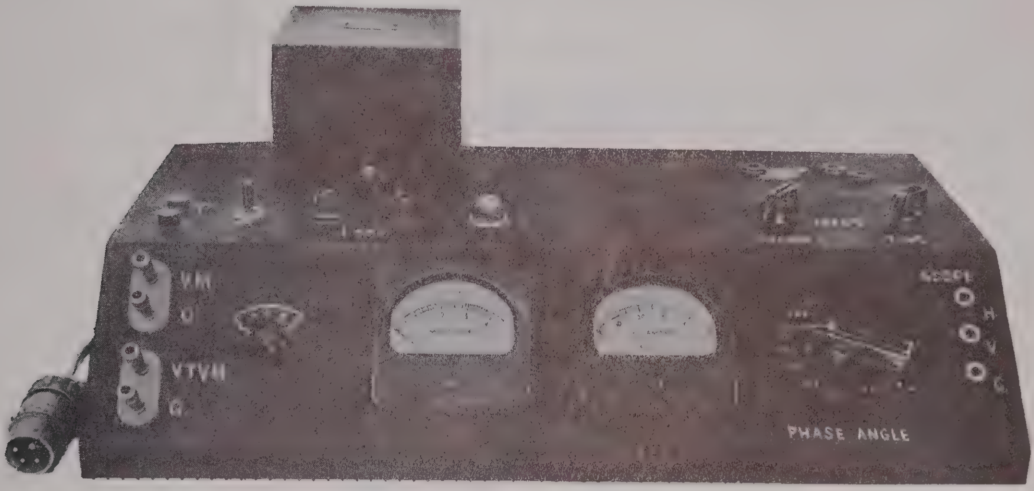
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
1	Switch, Selector Kollsman TE 5713 Kollsman TE 5714	0.9	10	12	13	8

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Switch, Selector (Kollsman TE 5713)			4	6	8-1/2	4
1	Switch, Selector (Kollsman TE 5714)		7CAC-783660	4	6	8-1/2	4

TESTER, AMPLIFIER
Part No. TE 5727
(Kollsman Instrument Corporation)



FUNCTIONAL DESCRIPTION:

This tester is designed to test the amplifier units of the C-2 True Airspeed and Mach Number Computer.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The tester panel includes two DC milliammeters, and jacks for connecting an external oscilloscope, a voltmeter, and a vacuum tube voltmeter into the test circuit. A calibrated phase angle switch, and coarse and fine input control switches are also on the panel. A selector switch is provided for connecting an external voltmeter into any one of three circuits in the tester. In the No. 1 position the high range milliammeter is connected in series between the amplifier to be tested and the external voltmeter. In the No. 2 position the low range milliammeter is so connected. In the No. 3 position the external voltmeter is connected to the output transformer of the amplifier under test. In this position the phase angle meter on the panel is adjusted until the externally connected oscilloscope displays an acceptable pattern. A power supply socket is mounted on the top of the tester assembly for plugging in the power supply unit. An AN type connector is used to connect the amplifier to be tested.

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.			

PROCUREM'T INFO.:
PROCUREM'T COG.: DESIGN COG.: Commercial
F.I.I.N.: FUNCTIONAL CLASS. NO.: 10.3
- Electronics Test Equipment - Kollsman TE 5727

his project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U.S.A.

TESTER, AMPLIFIER
Part No. TE 5727
(Kollsman Instrument Corporation)

ELECTROMECHANICAL DESCRIPTION: (Continued)

Power Supply: 115 volts, 400 cycles per second, single-phase, AC (to the power supply unit).

Milliammeter Ranges: 0 to 50, DC, milliamperes. 0 to 5, DC, milliamperes.

Phase Angle Increments: 5 degrees.

Phase Angle Range: 180 degrees to 210 degrees.

MANUFACTURERS' OR CONTRACTORS' DATA:

Kollsman Instrument Corporation, 80-08 45th Avenue, Elmhurst 73, New York; Contract No. AF 33(600)27206; Contract Date, 20 May 1954; Approximate Cost per Unit, $430.00.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 5F5-3-5-3 (Overhaul Instructions).

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
1	Tester, Amplifier (Kollsman TE 5727)	3	15	20	17	18

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Tester, Amplifier (Kollsman TE 5727)			7	17	15	11-1/4

TESTER-AMPLIFIER ELECTRICAL COMPASS COUPLER
Part No. UG47A-1
(Minneapolis-Honeywell Regulator Company)

FUNCTIONAL DESCRIPTION:

A portable test instrument which is used to supply simulated compass synchro signals to the RG7042A Directional Coupler Amplifier to check performance of the amplifier. The amplifier is a component of such autopilot systems as the E-11 and E-12 aircraft and helicopter autopilots.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The tester circuit consists of a synchro, a transformer, fixed resistors, switches, and pin terminal jacks. Connections are made between the tester and the unit under test by means of cables and receptacles. Controls on the tester direct current to the tester and to the unit under test. By regulating the signal control on the tester, a signal is sent to the amplifier. By applying known values of synchro signals to the amplifier and measuring the potentiometer wiper signal output, the amplifier condition may be determined. Provisions are made on the front panel of the tester to connect a standard electronic voltmeter, an oscilloscope, and a DC voltmeter. All test readings of amplifier performance

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-802635		
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10. 3	
	- Electronics Test Equipment - M. -Honeywell UG47A-1		

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

TESTER-AMPLIFIER ELECTRICAL COMPASS COUPLER
Part No. UG47A-1
(Minneapolis-Honeywell Regulator Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)

and conditions are made on these instruments.

Power Supply: 115 volts, AC, 400 cycles per second, single phase.
27.5 volts, DC.

Synchro Output Voltage: 11.8 volts, AC.

MANUFACTURERS' OR CONTRACTORS' DATA:

Minneapolis-Honeywell Regulator Company, 2753 Fourth Avenue, Minneapolis 8, Minnesota.

TUBE COMPLEMENT:

None .

REFERENCE DATA AND LITERATURE:

TO 33D3-4-25-1 (Instructions and Parts Breakdown).

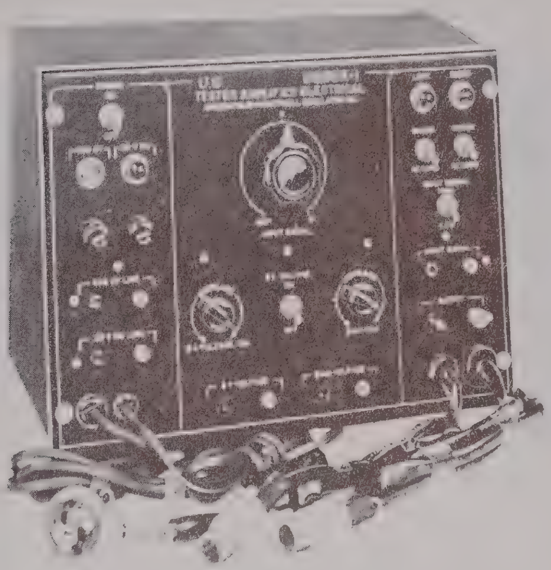
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Tester - Amplifier Electrical Compass Coupler Minneapolis-Honneywell Part No. UG47A-1	Aluminum	7CAC-802635	6-1/2	7	5	3

TESTER-AMPLIFIER ELECTRICAL
Part No. UG48A-1
(Minneapolis-Honeywell Regulator Company)



FUNCTIONAL DESCRIPTION:

A portable instrument which is used in conjunction with the UG183A-1 Pulse Rate Indicating Tester for checking and calibrating pulse rate and sensitivity control during overhaul and maintenance of the RG7064A-1 Single Channel Amplifier, a component of the E-12 Autopilot System.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: Connections are made with the unit under test by means of cables, receptacles, and alligator clips. By setting the switches and controls of the tester in the desired positions, a bridge transformer and related resistors provide an input signal to the unit under test. Circuits are provided to energize the amplifier and to filter the relay output. By connecting a voltmeter, the sensitivity and throttling control of the amplifier may be determined. The UG183A-1 Pulse Rate Calibrating Tester is connected to the output jacks in the front panel of the tester and the indications read on the pulse rate calibrating tester to determine pulse rate and dwell time.

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-801743-5		
PROCUREM'T INFO.:	Conforms to AN-D-17		
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.3	
	- Electronics Test Equipment -M. -Honeywell UG48A-1		

his project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U.S.

TESTER-AMPLIFIER ELECTRICAL
Part No. UG48A-1
(Minneapolis-Honeywell Regulator Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)

Power Supply: 115 volts, AC, 400 cycles per second, single phase.
28 volts, DC.

MANUFACTURERS' OR CONTRACTORS' DATA:

Minneapolis-Honeywell Regulator Company, 2753 Fourth Avenue, Minneapolis 8, Minnesota; Contract No. AF 33(600)19245.

TUBE COMPLEMENT:

1 JAN-5993.

REFERENCE DATA AND LITERATURE:

TO 33D3-2-11-1 (Instructions and Parts Breakdown).

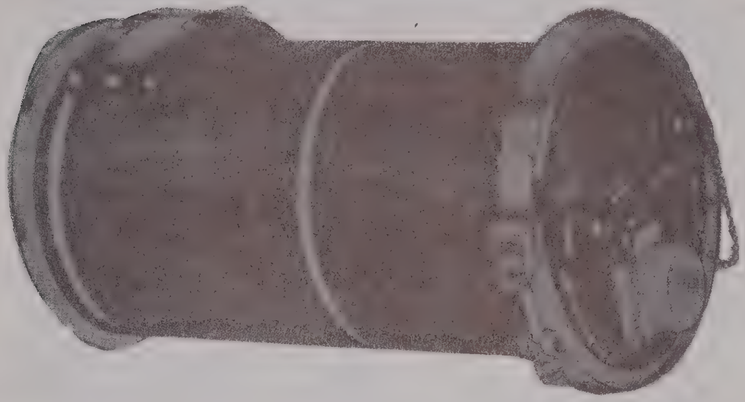
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Tester-Amplifier Electrical Minneapolis-Honeywell Part No. UG48A-1	Metal	7CAC-801743-5	9-1/2	7-1/2	13	8

TESTER, SENSE UNIT, CALIBRATION
Part No. UG 61A-1
(Minneapolis-Honeywell Regulator Company)



FUNCTIONAL DESCRIPTION:

This is a portable depot level test instrument designed to be used in the maintenance and overhaul of the 423388 Sense Unit Assembly, which is a part of the PG7030B Altitude Control.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The tester permits the testing and calibrating of the altitude control sense unit under simulated operating conditions. The sense unit is bolted to one end of the tester. The tester contains a followup motor and an amplifier which duplicate the electrical components that act upon the sense unit within the Altitude Control. As various air pressures are fed to the sense unit by means of auxiliary test equipment, a bellows-actuated, movable capacitor plate in the sense unit causes an electrical unbalance. The amplifier translates this unbalance signal into a correctly phased control signal to the follow-up motor. The follow-up motor rebalances the forces acting upon the movable capacitor plate. A degree dial on the follow-up motor shaft gives indication of the extent of rotation necessary to rebalance the forces applied to the sense unit movable capacitor plate. A velocity generator within the follow-up motor assembly provides

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAD-802425-55		
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.3	
	- Electronics Test Equipment -		M.H. UG 61A-1

is project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U.S.A.

TESTER, SENSE UNIT, CALIBRATION
Part No. UG 61A-1
(Minneapolis-Honeywell Regulator Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)

signal damping to prevent excessive overshoot. A switch is provided to permit stalling the follow-up motor when it is desired to adjust the sense unit without de-energizing the test set-up. An anti-hunt potentiometer adjustment permits varying the damping effect of the velocity generator signal. An AN type connector is provided to connect the tester to the UG 117A-1 Altitude Control Panel which is an auxiliary test equipment used to control the sense unit tester.

Power Supply: Power is provided by the test control panel of the UG 117A-1 Altitude Control Panel.

MANUFACTURERS' OR CONTRACTORS' DATA:

Minneapolis-Honeywell Regulator Company, 2753 Fourth Avenue, Minneapolis 8, Minnesota; Contract AF 33(600)22794.

TUBE COMPLEMENT:

1 JAN-6112, 1 JAN-5687.

REFERENCE DATA AND LITERATURE:

TO 33D3-4-39-1 (Instructions and Parts).

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

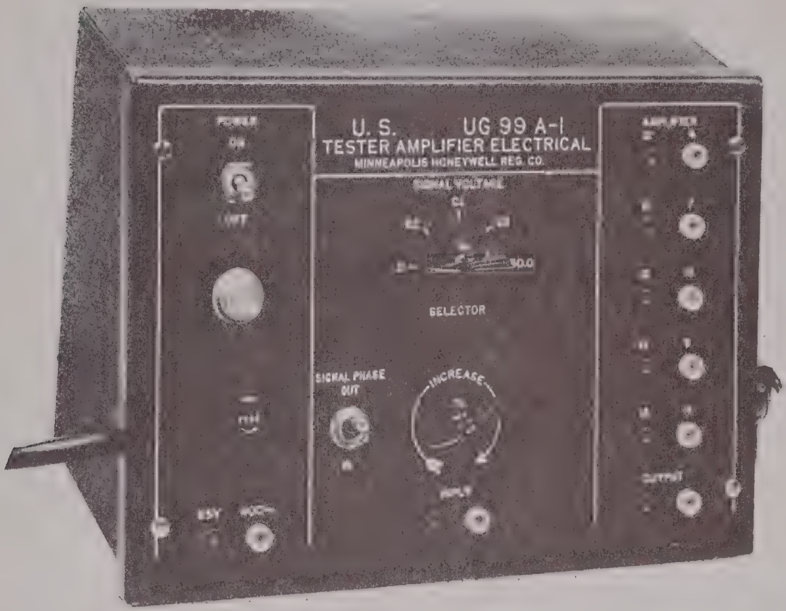
EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Tester, Sense Unit, Calibration (Minneapolis Honeywell UG 61A-1)		7CAD-802425-55	6-5/8 dia.	14-1/4		10

TESTER, AMPLIFIER, ELECTRICAL

Part No. UG99A-1

(Minneapolis-Honeywell Regulator Company)



FUNCTIONAL DESCRIPTION:

A portable, self-contained instrument which is used for depot-level maintenance. It supplies a variable signal to the amplifier of the PG 7030B altitude control and provides a means of checking the gain, the saturation level, and the output voltage.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The tester circuit consists of a selector switch, a transformer, a dummy load resistor, and pin terminal jacks. Connections are made between the tester and the unit under test by means of cables and receptacles. Controls on the tester supply current to the tester and to the unit under test. By regulating the signal controls on the tester a signal is sent to the amplifier. By this method of applying signals of known value to the amplifier and measuring the signal output, the amplifier condition may be determined. This is accomplished by attaching a vacuum tube voltmeter to the tester by means of the pin terminal jacks.

Power Supply: 115 volts, AC, 400 cycles per second, single phase.

Input Signal Voltages: 0, 0.02, 0.1, 1.0, and 30 volts.

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-801743		
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.3	
	- Electronics Test Equipment -M. Honeywell UG 99A-1		

is project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U.S.A.

TESTER, AMPLIFIER, ELECTRICAL
Part No. UG 99A-1
(Minneapolis-Honeywell Regulator Company)

MANUFACTUERES' OR CONTRACTORS' DATA:

Minneapolis-Honeywell Regulator Company, 2753 Fourth Avenue, Minneapolis 8, Minnesota; Contract No. AF 33(600)22794.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

Minneapolis-Honeywell data sheet.

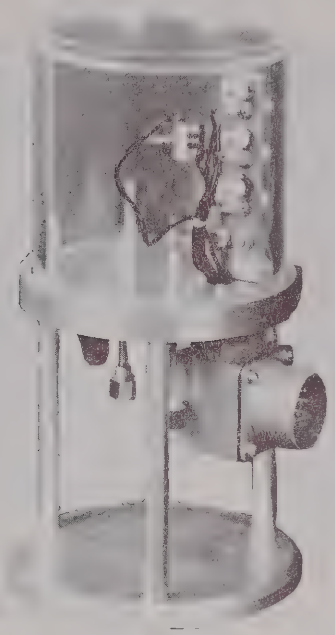
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Tester, Amplifier Electrical Minneapolis-Honeywell UG 99A-1	Steel	7CAC-801743	7	10	6	4

CALIBRATOR-ALTITUDE COMPENSATOR
Part No. UG 150A-1
(Minneapolis-Honeywell Regulator Company)



FUNCTIONAL DESCRIPTION:

A portable, self-contained overhaul fixture which is used at depot-level maintenance. It provides a vacuum chamber in which screwdriver adjustments may be made on the type PG 4A Altitude Compensator.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The fixture consists of a metal platform through which are mounted pressure-sealed screwdrivers and a vacuum fitting. An AN type connection and necessary wiring provide a means of attaching the fixture to the unit under test. A clear plastic cannister-shaped cover mounts over the unit during testing. The unit to be tested is placed upon the platform and the leads connected to the terminal board of the fixture. The plastic cover is placed over the

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-170275-962		
PROCUREM'T INFO.: USAF Drawing AD5078M			
PROCUREM'T COG.:	DESIGN COG.: Commercial		
F.I.I.N.:	FUNCTIONAL CLASS. NO.: 10.3		
- Electronics Test Equipment - M. Honeywell UG 150A-1			

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U.S.A.

CALIBRATOR-ALTITUDE COMPENSATOR
Part No. UG 150A-1
(Minneapolis-Honeywell Regulator Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)

unit and the internal air pressure regulated by a vacuum pump. The pressure-sealed screwdrivers are positioned to make the necessary adjustment under the desired atmospheric pressure.

Power Supply: None required.

MANUFACTURERS' OR CONTRACTORS' DATA:

Minneapolis-Honeywell Regulator Company, 2753 Fourth Avenue, Minneapolis 8, Minnesota; Contract No. AF 33(600)22794.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

Minneapolis-Honeywell data sheet.

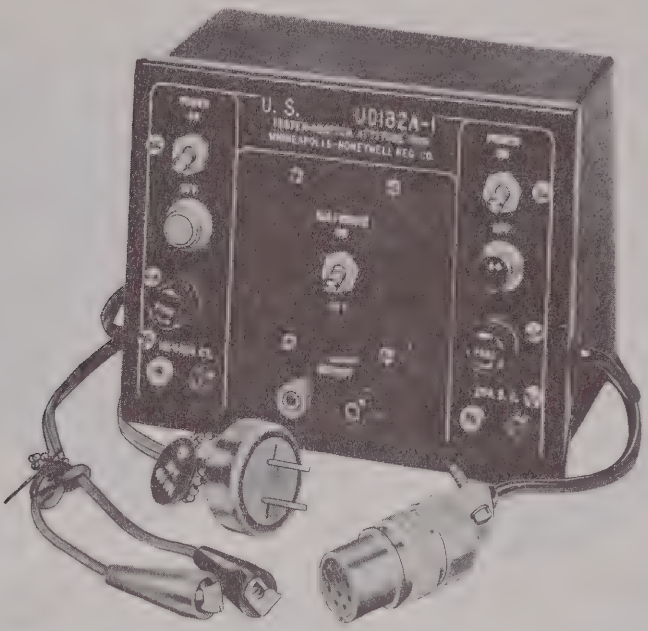
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Calibrator-Altitude Comppensator (Minneapolis-Honeywell UG 150A-1	Metal and Plastic	7CAC-170275-962	6	6 dia.		1

TESTER-ADAPTER, ATTITUDE TRIM ELECTRICAL
Part No. UG182A-1
(Minneapolis-Honeywell Regulator Company)



FUNCTIONAL DESCRIPTION:

A portable instrument used in conjunction with the UG183A-1 Pulse Rate Indicating Tester to electrically check the operation of the SG4A-1 Attitude Trim Adapter. The tester contains the circuits necessary to connect and operate the attitude trim adapter during overhaul and electrical testing.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL EQUIPMENT:

Circuit Information: Connections are made between the tester, the pulse rate indicating tester, and the attitude trim adapter by means of cables, plugs, and receptacles. The tester circuit, energized by throwing the AC and DC switches which are located on the front panel of the tester, provides an output voltage. The output voltage is passed to the unit under test, back through the tester and into the pulse rate indicating tester. Readings of test results are given on the pulse-rate timer of the indicating tester.

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-801940		
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.3	
	- Electronics Test Equipment - M.-Honeywell UG182A-1		

is project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U.S.A.

TESTER-ADAPTER, ATTITUDE TRIM ELECTRICAL
Part No. UG182A-1
(Minneapolis-Honeywell Regulator Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)

Voltage Ratings:

Input Voltage: 115 volts, AC, 400 cycles per second, ±10%; 28 volts, DC, ±2 volts.

Output Voltage: 9 to 10 volts, DC.

MANUFACTURERS' OR CONTRACTORS' DATA:

Minneapolis-Honeywell Regulator Company, 2753 Fourth Avenue, Minneapolis 8, Minnesota.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 33D3-4-20-1 (Instructions and Parts Breakdown).

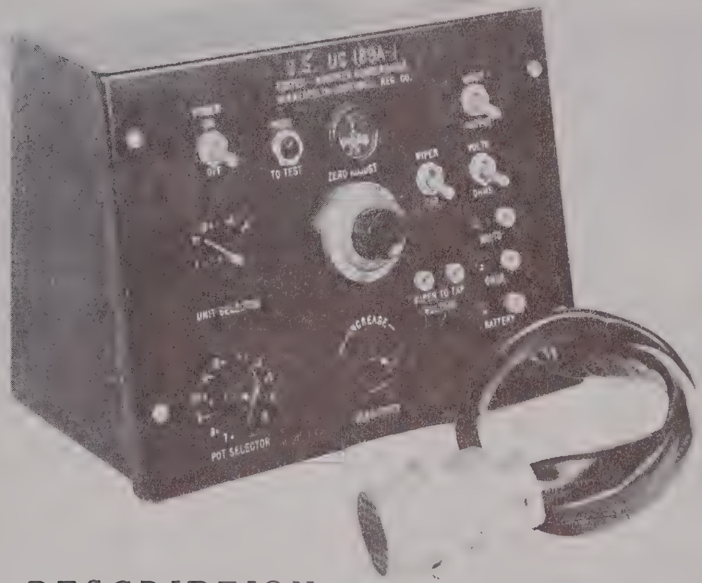
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Tester-Adapter, Attitude Trim Electrical Minneapolis-Honeywell Part No. UG182A-1	Metal	7CAC-801940	5-11/16	4-3/16	7-7/16	1.5

TESTER, AIRSPEED COMPENSATOR ELECTRICAL
Part No. UG 189A-1
(Minneapolis-Honeywell Regulator Company)



FUNCTIONAL DESCRIPTION:

A portable, general purpose, overhaul and maintenance type test instrument designed to facilitate the electrical testing and checking of the output characteristics of the PG 7007B2 Airspeed Compensators of various autopilot systems. This tester contains the various components necessary to apply the proper voltage to nine potentiometers in the compensator, thus enabling an operator to compare input and output voltages of each potentiometer as the pressure on the bellows is varied. Potentiometer linearity, resistance, and cleanliness may also be checked.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: A 22.5 volt battery, internally mounted, provides DC power to the calibrating circuit which includes a helipot, microammeter, and sensitivity potentiometer adjustment. These components, together with switches and tip jacks, are mounted on the tester panel. Connection to the unit to be tested is accomplished by means of a cable and AN connector which are integral with the tester.

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-801951		
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.3	
	- Electronics Test Equipment - M. Honeywell UG 189A-1		

s project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U.S.A.

TESTER, AIRSPEED COMPENSATOR ELECTRICAL
Part No. UG 189A-1
(Minneapolis-Honeywell Regulator Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)
Power Supply: One 22.5 volt "B" battery.
Accuracy of Resistance Bridge: ±0.2%.

MANUFACTURERS' OR CONTRACTORS' DATA:

Minneapolis-Honeywell Regulator Company, 2600 Ridway Road, Minneapolis 13, Minnesota; Contract No. AF 33(600)22794.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

Minneapolis-Honeywell Engineering Specification No. AD5078M, dated 4 November, 1954.

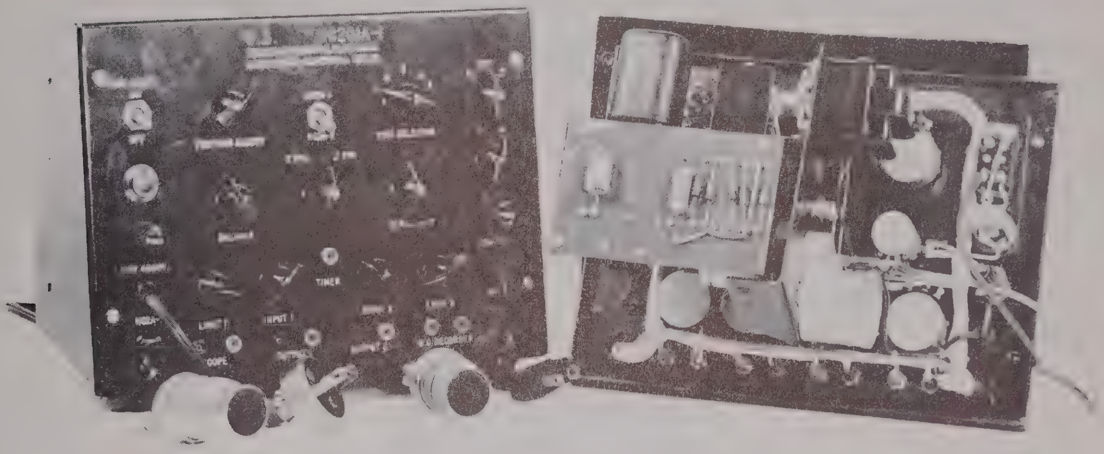
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Tester, Air-Speed Compensator Electrical (Minneapolis-Honeywell UG 189A-1)		7CAC-801951	7	10	5-1/2	5.75

TESTER, INTEGRATOR, ELECTRICAL
Part No. UG 201A-1
(Minneapolis-Honeywell Regulator Company)



FUNCTIONAL DESCRIPTION:

A portable tester which is used at depot-level maintenance and overhaul to facilitate the electrical testing of the HG2A Integrator, a component of the E-11 Autopilot System. The unit may be used to test integrator timing, sensitivity, rebalance, and phasing, and pitch and yaw responses.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The tester circuitry consists of panel-mounted switches, pin terminal jacks, and potentiometers. An internal battery supplies the DC current for the operation of a recorder. Connections are made with the unit under test by means of cables and receptacles which are permanently attached to the tester. To perform the timing test an electrically operated timer is connected to the "Timer" pin terminal jacks and a vacuum tube voltmeter is connected to the "Output 2" jacks. By regulating the various panel-mounted switches the potentiometer of the integrator is set in operation and completes travel. Period of travel time is determined by the timer. Sensitivity of the integrator is determined by connecting vacuum tube voltmeter integrator leads to "Output 1" and "Output 2" and regulating the "Sensitivity" control to a null at "Output 1." "Sensitivity" control is rotated clockwise for initial rise in "Output 1." Voltage is recorded at "Output 2." This procedure is repeated, except that the "Sensitivity" control is rotated counterclockwise. Sensitivity of the integrator in millivolts is the

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-807230		
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.:	10.3
- Electronics Test Equipment - M. Honeywell UG 201A-1			

is project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

TESTER, INTEGRATOR, ELECTRICAL
Part No. UG 201A-1
(Minneapolis-Honeywell Regulator Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)

algebraic difference of the two "Output 2" voltage readings. By connecting vacuum tube voltmeter leads to "Output 1" and "Output 2" and regulating the "Test Selector" and "Input" switches, the voltage indications are read at "Output 1" and "Output 2" for rebalance and phasing tests. To determine pitch integrator response, a DC recorder and a vacuum tube voltmeter are connected to the tester and the various switching controls are regulated. Peak-to-peak recorder readings indicate the integrator pitch response. Tests for yaw integrator response is similar to the above, except that readings are indicated on an oscilloscope.

Power Supply: 115 volts, AC, 60 cycles per second, single phase.
115 volts, AC, 400 cycles per second, single phase.
22.5 volts, DC, (internal battery).

MANUFACTURERS' OR CONTRACTORS' DATA:

Minneapolis-Honeywell Regulator Company, 2753 Fourth Avenue, Minneapolis 8, Minnesota; Contract No. AF 33(600)22794.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

Minneapolis-Honeywell data sheet.

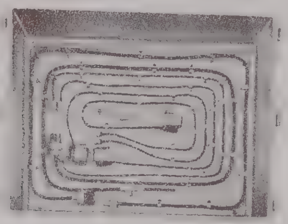
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Tester, Integrator, Electrical (Minneapolis-Honeywell UG 201A-1)	Metal	7CAC-807230	7-1/2	10-1/2	5-1/2	8-1/2

TEST SET, COMPUTER PLUG-IN SYSTEM
Part No. NAA 15412-305
(North American Aviation, Incorporated,
Autonetics Division)



TEST SET
COMPUTER PLUG-IN

FUNCTIONAL DESCRIPTION:

A special purpose test set designed to field test, calibrate, and service plug-in amplifier units in the prediction and ballistics computers of the MG-4 Fire Control System. The test set provides voltages and operating conditions for performing open and closed loop tests on the amplifiers. The control panel includes a galvanometer, two AC ammeters, two DC ammeters, selector dials, and input jacks for the connection of auxiliary equipment.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The test set power supply provides the necessary AC and/or DC voltages for energizing the amplifier under test. Test signals are transmitted through the test set to the amplifier by means of the input attenuator or the input potentiometer. The output of the amplifier may be measured at an output jack on the control panel.

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-801318-5355		
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.:	10.3
	- Electronics Test Equipment -		NAA 15412-305

s project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U.S.A

TEST SET, COMPUTER PLUG-IN SYSTEM
Part No. NAA 15412-305
(North American Aviation, Incorporated,
Autonetics Division)

ELECTROMECHANICAL DESCRIPTION: (Continued)

The circuit provides means for determining closed loop gain, open loop gain with varying frequency input, magnetic amplifier nulling and reactor currents, signal demodulation performance, servo motor operation, potentiometer linearity, and output voltage distortion.

For the measurement of reactor currents, a fixed voltage is applied to the amplifier. The amplifier gain is measured by the difference in load currents as indicated by the two AC ammeters.

For the testing of servo motor operation the output of the amplifier is used to drive a motor in the test set. This motor is connected to a motor-driven variable resistance. Proper servo operation is indicated by smooth voltage cycles, displayed on an auxiliary oscilloscope, as the potentiometer is varied through its range.

An audio oscillator and a summing network provide means for transmitting a signal of varying frequency and constant voltage to the amplifier. This signal is used to determine the ratio of maximum rise in voltage (due to increase or decrease in frequency) to the voltage level at normal operating frequencies.

Power Supply: 115 ± 5 volts, AC, single-phase, 400 ± 10 cycles per second, 1.11 ± 5% form factor, 1.41 ± 10% crest factor, 100 watts. 115 ± 10 volts, AC, single-phase, 50 to 1000 cycles per second, 1.03 to 1.25 form factor, 1.16 to 1.68 crest factor, 100 watts.

Power Outputs: +165 volts, DC, regulated to ± 1% maximum ripple 100 millivolts peak-to-peak, 100 milliampere maximum current. -150 volts, DC, ± 2-1/2 volts, maximum ripple 100 millivolt rms, 10 milliampere maximum. 6.3 volt, AC, 400 ± 10 cycles per second, center tapped, 3 amperes maximum. 52 volts, AC, 400 ± 10 cycles per second, center tapped, 20 milliampere maximum. 100 volts, AC, 400 ± 10 cycles per second, center tapped, 500 milliampere maximum. 100 volts, AC, 400 ± 10 cycles per second, 5 milliampere maximum. 135 volts, AC, 0-degree phase angle, 400 ± 10 cycles per second, 2 milliamperes maximum. 115 volts, AC, 0-degree phase angle, 400 ± 10 cycles per second, maximum current 400 milliamperes. 60 volts, AC, 0-degree phase angle, 400 ± 10 cycles per second; 7 milliampere maximum. 70 volts, AC, 180 degree phase angle, 400 ± 10 cycles per second, 250 milliampere maximum. 115 volts, 180 degree phase angle, 400 ± 10 cycles per second, 150 milliamperes maximum.

MANUFACTURERS' OR CONTRACTORS' DATA:

Autonetics Division of North American Aviation Incorporated, Downey, California; Contract No. AF 33(600)26479; Approximate Cost per Unit, $ 6,487.42.

TEST SET, COMPUTER PLUG-IN SYSTEM

Part No. NAA 15412-305
(North American Aviation, Incorporated,
Autonetics Division)

TUBE COMPLEMENT:

1 JAN-OB2WA, 1 JAN-OA2WA, 3 JAN-6005/6AQ5W/6095, 1 JAN-6AU6WA, 1 JAN-5896.

REFERENCE DATA AND LITERATURE:

TO 33D5-5-109-1 (Operation and Service Instructions).
TO 33D5-5-109-4 (Illustrated Parts Breakdown).

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Test Set, Computer Plug-In System NAA-15412-305	Aluminum	7CAC-801318-5355	20-1/4	24	18-3/4	100
1	400-Cycle Electrical Power Cable NAA-16333-305						
3	Signal Electrical Interconnecting Cable NAA-16335-305						

(Continued)

TEST SET, COMPUTER PLUG-IN SYSTEM

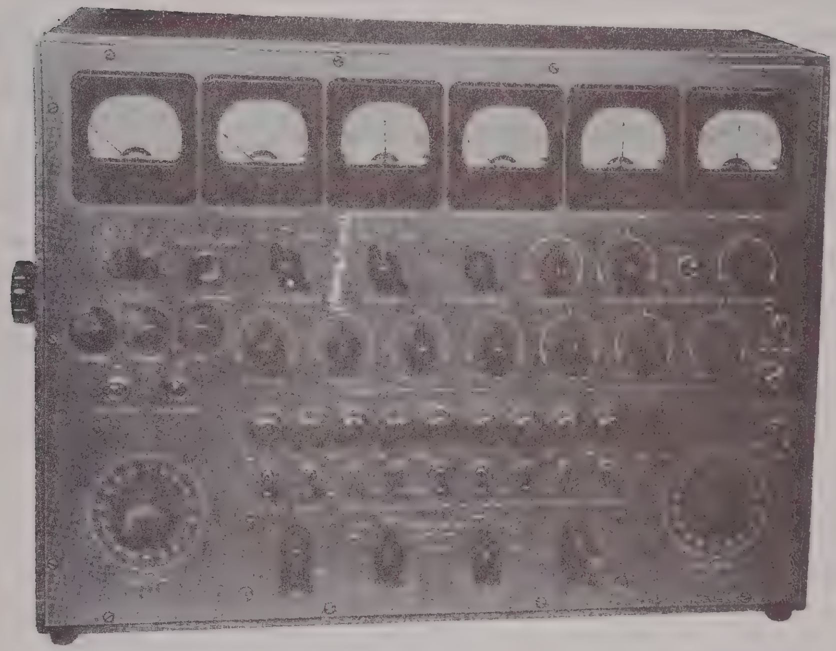
Part No. NAA 15412-305

(North American Aviation, Incorporated,
Autonetics Division)

EQUIPMENT SUPPLIED: (Continued)

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Signal Electrical Oscillograph Cable NAA-16336-305						
1	Set Special Tools						
	Including:						
1	Special Screwdriver NAA-16337-305						
1	Hex Allen Wrench No. 4						
1	Hex Allen Wrench No. 8						

AMPLIFIER ANALYZER
Part No. T-100812
(Sperry Gyroscope Company)



FUNCTIONAL DESCRIPTION:

A portable test instrument which is used as an overhaul-depot tool to test type B-6 and B-9 Amplifiers and components of each. The type B-6 and B-9 Amplifiers are components of the type E-4 and A-12D Automatic Pilot systems. The analyzer provides signal and excitation voltages, switching and metering circuits, dummy loads, and it measures the performance of amplifier circuits.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: A single-phase, self-synchronous induction motor drives the arm of a circular potentiometer around the potentiometer's resistance element. The element has a DC voltage impressed across it. The potentiometer is so designed that as the arm moves around the element, it picks up a current flow that varies from zero to maximum, returns to zero, reverses direction of flow

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-038250		

PROCUREM'T INFO.:
PROCUREM'T COG.: DESIGN COG.: Commercial
F.I.I.N.: FUNCTIONAL CLASS. NO.: 10.3
- Electronics Test Equipment -Sperry Part No. T-100812

his project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

AMPLIFIER ANALYZER
Part No. T-100812
(Sperry Gyroscope Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)
to a second maximum (equal and opposite to the first maximum) and then goes back to zero. This takes place for 360 degrees of rotation of the arm to generate a sinusoidally varying direct current. A microammeter is in series with the potentiometer arm, providing a means of direct observation of the current variations. This varying current is used as a rate or displacement signal for the unit under test. Polarity of the signal is determined by the position of the potentiometer arm. The other circuits of the analyzer are simple systems consisting of selector switches which feed desired signals to meters, and potentiometers which adjust the magnitude of the signals. Jacks are provided for the external connection of vacuum tube voltmeters. By the setting of the various switches and controls found on the front panel of the analyzer the components of the unit under test are either energized or made inoperative.

Power Supply:	115 volts, AC, 400 cycles per second, three-phase.
	115 volts, AC, 60 cycles per second, single-phase.
	27.5 volts, DC.
Voltage Measuring Range:	Two meters, 0 to 50 volts, AC.
	One meter, 5 to 0 to 5 volts, AC.
	One meter, 125 to 0 to 125 volts, AC.
Current Measuring Range:	One meter, 0 to 50 milliamperes, DC.
	One meter, 250 to 0 to 250 microamperes, DC.

MANUFACTURERS' OR CONTRACTORS' DATA:
Sperry Gyroscope Company, Great Neck, Long Island, New York.

TUBE COMPLEMENT:
1 JAN-6X5GT.

REFERENCE DATA AND LITERATURE:
TO 33D3-2-7-1 (Operation and Service Instructions).
TO 33D3-2-7-4 (Parts Breakdown).

SHIPPING DATA:

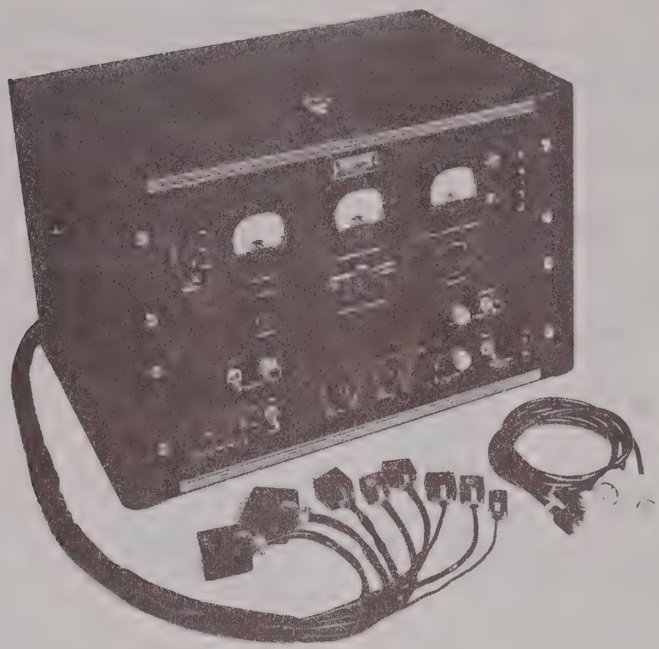
No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
Sperry Part No.T-100802 - Electronics Test Equipment -						

AMPLIFIER ANALYZER
Part No. T-100812
(Sperry Gyroscope Company)

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Analyzer Amplifier (Sperry Part No. T-100812)	Aluminum & Wood	7CAC-038250	9-1/4	20-3/4	15	
2	Cable Assembly						

AMPLIFIER ANALYZER
Part No.: T-100895
(Sperry Gyroscope Company)



FUNCTIONAL DESCRIPTION:

A portable special purpose analyzer designed to test various parts of the amplifier unit used in the MA-2 Fire Control and the A-1 Gun Bomb Rocket Sight Systems. The analyzer acts as a signal source and a distributor of that signal to the different channels in the amplifier. The analyzer permits the following test procedures: a check on the polarity, the gain, the filter action and the sensitivity in the deflection and elevation channels; a check on the gain and the sensitivity in the range channel and checks on the bomb release relay and the flasher lamp.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: Two self-contained voltmeters permit the measurement of the output voltages of the deflection, elevation, and range channels. Test jacks are provided as a ready means of placing a vacuum tube voltmeter across the inputs of these channels. A milliammeter circuit is used to measure the output current of the sensitivity channel. Potentiometer circuits permit the signal amplitudes to be varied for calibration and test purposes.

Power Supply: 28 volts, AC, 400 cycles per second, single-phase.

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-038190		
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.3	
	- Electronics Test Equipment - Sperry Part No. T-100895		

s project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U.S.A.

AMPLIFIER ANALYZER
Part No. T-100895
(Sperry Gyroscope Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)

"Range" Voltmeter: Rectifier type, 0 to 100 volts AC; sensitivity, 1000 ohms per volt.

"Amplifier Output" Voltmeter: 100 to 0 to 100 volts DC; sensitivity, 2000 ohms per volt.

"Sight Current Output" Milliammeter: 0 to 100 milliamperes.

MANUFACTURERS' OR CONTRACTORS' DATA:

Sperry Gyroscope Company, Great Neck, Long Island, New York.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 33D5-2-4-1 (Operation and Service Instructions).

TO 33D5-2-4-4 (Parts Catalog).

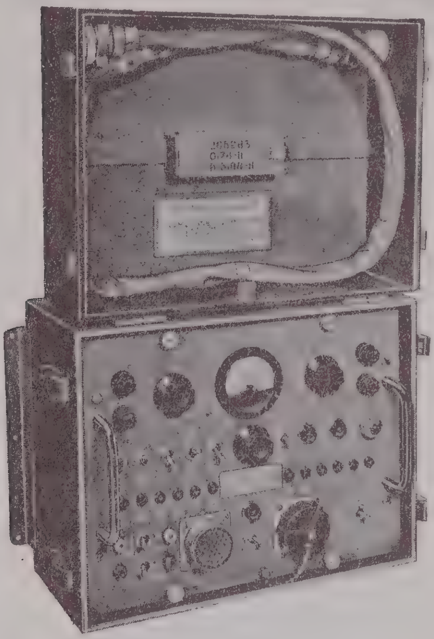
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Amplifier Analyzer Sperry Part No. T-100895		7CAC-038190	14-3/4	23-3/4	16	42
1	Cable Assembly T-100895-802						
Sperry Part No. T-100895 - Electronics Test Equipment -							

STABILIZATION TESTER ASSEMBLY
Part No. T-101001
(Sperry Gyroscope Company)



UNCTIONAL DESCRIPTION:

A portable test instrument designed to permit the control and observation of the arious circuits of the stabilization system. The tester assembly acts as a junction ox with control and measuring circuits used to evaluate the normal operating conitions.

ELATIONSHIP TO OTHER EQUIPMENT:

LECTROMECHANICAL DESCRIPTION:

ircuit Information: A vacuum tube voltmeter circuit is used to measure the phase and magnitude of the signal voltages applied to the fields of the torque motors, the level signal voltages, and the roll and pitch synchro voltages. The voltage readings observed are indicative of the servo error signals and are used to check the operation of the servos. A cathode follower circuit with a high input impedance causes a negligible loading effect on the circuit being examined. In addition, a voltage limiter circuit prevents excessive phase shift of the signal when large input signals are measured.

ower Supply: Power for operation of the tester is obtained from the system under test.

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-801898		
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10_3	
	- Electronics Test Equipment - Sperry Part No. T-101001		

s project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U.S.A.

STABILIZATION TESTER ASSEMBLY
Part No. T-101001
(Sperry Gyroscope Company)

MANUFACTURERS' OR CONTRACTORS' DATA:

Sperry Gyroscope Company, Division of the Sperry Corporation, Great Neck, Long Island, New York.

TUBE COMPLEMENT:

2 JAN-6AL5, 1 JAN-2C51.

REFERENCE DATA AND LITERATURE:

TO 33D5-3-5-1 (Operation and Service Instructions).
TO 33D5-3-5-4 (Parts Catalog).

SHIPPING DATA:

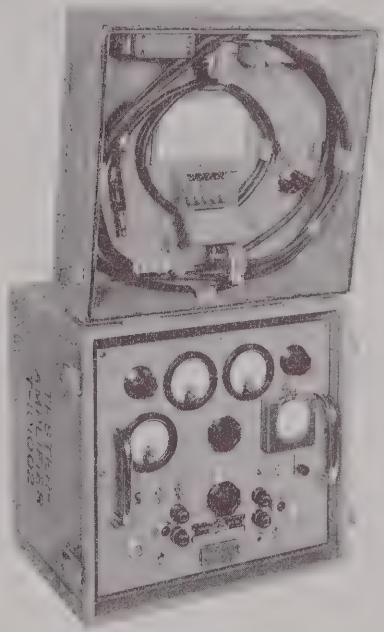
No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Stabilization Tester Assembly Sperry Part No. T-101001		7CAC-801898	11-3/4	14-1/2	11-1/4	22.5
1	Cable Assembly						

Sperry Part No. T-101001- Electronics Test Equipment -

TESTER, AMPLIFIER
Part No. T-101002
(Sperry Gyroscope Company)



FUNCTIONAL DESCRIPTION:

A portable field test instrument designed to test the quality and overall operation of the hermetically sealed amplifiers used in various computing Gun-Bomb-Rocket Systems. The tester utilized circuits to duplicate the normal input and operating load conditions of the amplifier under test.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: A conventional rectifier circuit and filter section is used to furnish the regulated +175 volts, DC, at a continuous current rating of 50 milliamperes. In addition, the +300 volts, DC, is also regulated by using the regulated

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-801960		
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.3	
	- Electronics Test Equipment -		Sperry T-101002

is project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

TESTER, AMPLIFIER
Part No. T-101002
(Sperry Gyroscope Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)

+175 volts as a reference source with amplifier and gate tubes. This supply is capable of providing a continuous current of 100 milliamperes at +300 volts, DC. The 400 cycles per second, AC, used to supply excitation, reference, or signal source voltages is regulated by means of a saturable reactor circuit. An 800-cycle signal source required for testing the type MH amplifiers is derived from the 400-cycle voltage by means of a frequency doubling circuit, which utilizes the ripple voltage of the rectifier circuit. Auxiliary circuits provide simulated operating characteristics for the various individual amplifiers.

Power Supply:

115 volts, AC, single-phase, 400 cycles per second, 150-volt-amperes.

This voltage is used to supply the power for the high voltage supplies, the filaments of all tubes in the tester and the amplifier under test, the reference and signal voltages, and the voltage to auxiliary circuits.

27 volts, DC, at 5 watts.

Supplies the power to operate relays in the tester in addition to relays and certain auxiliary circuits in the amplifiers under test.

MANUFACTURERS' OR CONTRACTORS' DATA:

Sperry Gyroscope Company, Division of the Sperry Corporation, Great Neck, Long Island, New York.

TUBE COMPLEMENT:

1 JAN-OB2, 1 JAN-5R4GY, 2 JAN-6AL5, 2 JAN-6AQ5, 1 JAN-6J6, 1 JAN-6V6GT/G, 2 JAN-6Y6G.

REFERENCE DATA AND LITERATURE:

TO 33D5-2-5-1 (Operation and Service Instructions).
TO 33D5-2-5-4 (Parts Breakdown).

SHIPPING DATA:

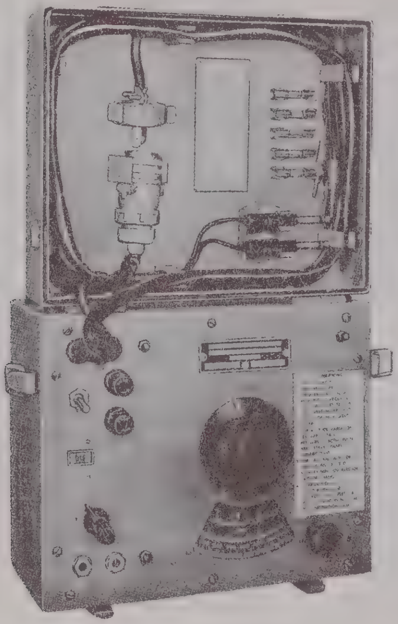
No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Over-all Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
Sperry Part No. T-101002 - Electronics Test Equipment -						

TESTER, AMPLIFIER
Part No. T-101002
(Sperry Gyroscope Company)

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Tester, Amplifier Sperry Part No. T-101002		7CAC-801960	13-3/4	14-1/2	14-3/4	40
1	115-volt Cable Assembly						
1	27-volt Cable Assembly						
1	Cable Assembly (AC Meter)						

METER UNIT TESTER ASSEMBLY
(METER UNIT TEST ASSEMBLY)
Part No. T-101018
(Sperry Gyroscope Company)



UNCTIONAL DESCRIPTION:

A portable tester used to check the operation of the Altitude Variation and Air-peed Transmitter A-1 contained within the A-1 Bombing-Navigational Computer. he tester is designed to check the unit under simulated normal conditions.

ELATIONSHIP TO OTHER EQUIPMENT:

LECTROMECHANICAL DESCRIPTION:

ircuit Information: Connection with the unit under test is accomplished by means of a cable assembly. An excitation voltage is applied to the rotor winding of the synchros and is also used as the reference voltage for an oscilloscope. A signal voltage is developed across the rotor windings which is compared to the reference voltage by use of the oscilloscope. Pressure-and-temperature-sensitive diaphragms within the tester are coupled to the dial shaft and effect direct readings on the dial. The dial is then manually positioned until a null reading is

(Continued)

	AIR FORCE	NAVY	ARMY
YPE CLASS.			
TOCK NOS.	7CAC-801800		

ROCUREM'T INFO.:
ROCUREM'T COG.: DESIGN COG.: Commercial
.I.I.N.: FUNCTIONAL CLASS. NO.: 10.3
- Electronics Test Equipment -Sperry Part No. T-101018

project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U.S.A.

METER UNIT TESTER ASSEMBLY
(METER UNIT TEST ASSEMBLY)
Part No. T-101018
(Sperry Gyroscope Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)

observed on the oscilloscope. The dial reading is then indicative of true airspeed values. By comparing the second dial reading with the initial reading the altitude variation may be determined.

Power Supply: 115 volts, AC, 400 cycles per second, single-phase.

MANUFACTURERS' OR CONTRACTORS' DATA:

Sperry Gyroscope Company, Great Neck, Long Island, New York.

TUBE COMPLEMENT:

REFERENCE DATA AND LITERATURE:

TO 33D5-5-12-1 (Operation and Service Instructions).
TO 33D5-5-12-4 (Parts Breakdown).

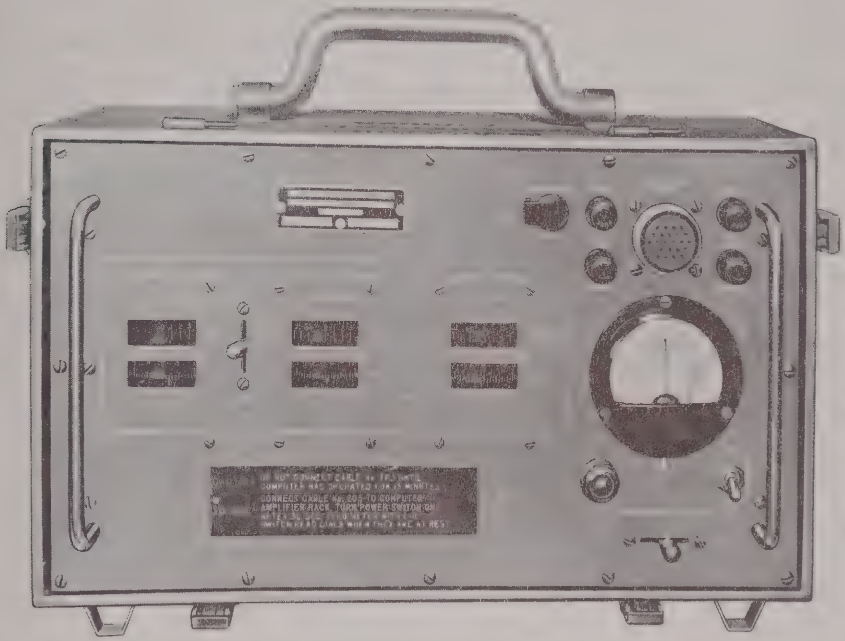
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Meter Unit Tester Assembly (Sperry Part No. T-101018)		7CAC-801800	9-1/2	11-1/2	6-1/4	8
2	Test Lead						

DATA REPEATER INDICATOR
Part No. T-101023
(Sperry Gyroscope Company)



FUNCTIONAL DESCRIPTION:

A portable repeating unit which is used to display output data of the Polar Con-erter A-1. The slant range, sighting angle, and true heading of the line of sight f the type A-1 Bombing-Navigational Computer are computed by the polar converter. ince it is difficult to read the data on the polar converter, it is necessary to use his indicator to visually observe the readings. The equipment includes calibrated ials for sighting angle, true bearing, and slant range readings and a galvanometer.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

ircuit Information: Three servos are employed to actuate the dials which display the readings of the polar converter. The true bearing servo contains an amplifier which demodulates and amplifies the signal received from the receiver

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-439722		
PROCUREM'T INFO.:			
PROCUREM'T COG.:	DESIGN COG.: Commercial		
F.I.I.N.:	FUNCTIONAL CLASS. NO.: 10.3		
	- Electronics Test Equipment - Sperry Part No. T-101023		

project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

DATA REPEATER INDICATOR
Part No. T-101023
(Sperry Gyroscope Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)

synchros of the polar converter connected in parallel with the receiver synchros of the indicator. This amplifier controls the servo motor which positions the dials for correct readings. The sighting angle servo amplifier receives the signal obtained from the pitch-corrected sighting angle synchros of the Y-1 Periscope Bombsight connected in parallel with the receiver synchros of the indicator. The servo motor then positions the dials for the sighting angle. The slant range servo displays fine and course readings of slant range by paralleling the fine synchro and the course potentiometer in the polar converter. The potentiometers of the indicator and of the polar converter can be synchronized by adjusting the galvanometer to a zero position.

Power Supply: +27 volts, DC; 115 volts, AC, 400 cycles per second, single-phase obtained via the A-1 Computer.

Dial Calibrations:
Slant Range: Course: 0 to 16 feet X1000.
Fine: 0 to 50 feet X100.
True Bearing: Course: 0 to 36 degrees X10.
Fine: 0 to 10 degrees X1.
Sighting Angle: Course: 0 to 36 degrees X10.
Fine: 0 to 10 degrees X1.

MANUFACTURERS' OR CONTRACTORS' DATA:

Sperry Gyroscope Company, Great Neck, Long Island, New York.

TUBE COMPLEMENT:

2 JAN-6J6.

REFERENCE DATA AND LITERATURE:

TO 33D5-5-16-1 (Operation and Service Instructions).
TO 33D5-5-16-4 (Parts Catalog).

SHIPPING DATA:

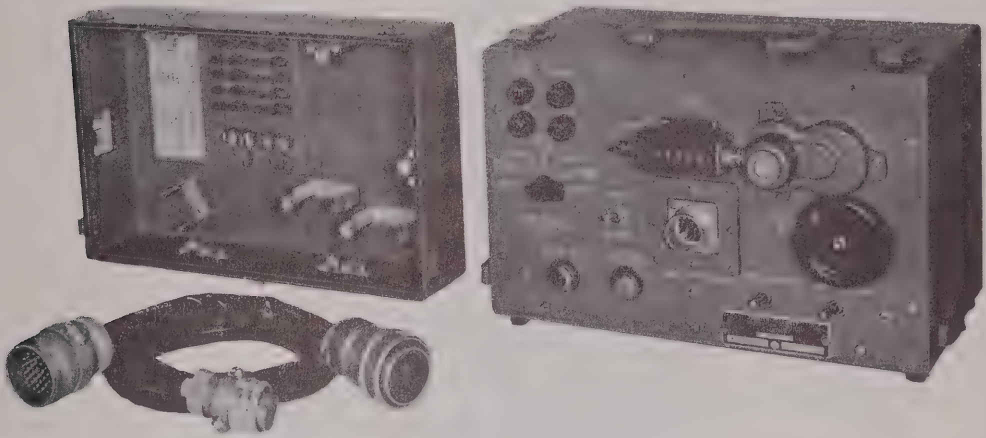
No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Over-all Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
Sperry Part No. T-101023 - Electronics Test Equipment -						

DATA REPEATER INDICATOR
Part No. T-101023
(Sperry Gyroscope Company)

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock (USAF) Numbers (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Data Repeater Indicator Sperry T-101023		7CAC-439722	10	17-1/2	10	29
	Including:						
1	Power Cable Assembly						
1	Allen Wrench						
1	Carrying Case and Cover						

TESTER ASSEMBLY, NAVIGATIONAL CONTROL
Part No. T-101025
(Sperry Gyroscope Company)



FUNCTIONAL DESCRIPTION:

The tester assembly is a portable, organizational level tool used for testing the navigation control (Serial numbers 71-On).

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The tester assembly contains two synchros driven by a constant speed DC motor. The com is used to simulate the tracking computer inputs to the navigation control over a closed artificial navigation course for both a system setup and a component test. A four-wafer, seven-position switch is used to select signals for north and east velocity in knots. A handwheel driven "Latitude x . 1 Min." counter provides the time interval in minutes of latitude for each leg of the course. The counter is geared to the rotor of the latitude synchro. A north reverse switch and an east reverse switch are provided on the panel to reverse the stator connections of the latitude and longitude synchros respectively. A lamp is used to indicate when the computer power is energizing the synchros of the tester. A second lamp indicates when the north and east velocity selector switch is not in an "Off" position. A receptacle is provided on the panel to receive one end of the cable which is used to connect the tester to the equipment under test.

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-801868		

PROCUREM'T INFO.:
PROCUREM'T COG.: DESIGN COG.: Commercial
F.I.I.N.: FUNCTIONAL CLASS. NO.: 10.3
- Electronics Test Equipment - Sperry T-101025

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U.S.A

TESTER ASSEMBLY, NAVIGATIONAL CONTROL
Part No. T-101025
(Sperry Gyroscope Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)
Power Supply: 115 volts, AC, 400 cycles per second, single-phase and 27 volts, DC.

MANUFACTURERS' OR CONTRACTORS' DATA:
Sperry Gyroscope Company, Division of the Sperry-Rand Corporation, Great Neck, Long Island, New York; Contract No. AF 33(038)-14787.

TUBE COMPLEMENT:
None.

REFERENCE DATA AND LITERATURE:
TO 33D5-5-17-1 (Operation and Service Instructions).
TO 33D5-5-17-4 (Parts Breakdown).
TO 33D5-5-17-502 (Modification).

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Tester Assembly, Navigational Control (Sperry T-101025)		7CAC-801868	10-1/2	12-1/2	8-1/4	15
	Including:						
1	Cable (Sperry T-101025-903)						

STABILIZATION UNIT ANALYZER
Part No. T-101058
(Sperry Gyroscope Company)

FUNCTIONAL DESCRIPTION:

A portable testing instrument which energizes and controls the stabilization unit of the A-1 Bombing-Navigational Computer for test purposes. By using the analyzer, the stabilization unit may be energized and tested without the necessity of operating the entire computer.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The unit to be tested is placed in a holding fixture, leveled by means of three leveling screws, and connections are made. Voltages are applied to the tester and the stabilization unit circuits by arrangement of switches and controls on the two units. The gyro current is checked by means of gyro current meters. By setting the switches and controls, which are located on the front panel of the analyzer, power is available to energize the pitch, roll, and azimuth torque motors of the unit under test. Erection time and position of the gyro platform may then be checked. Drift measurement is effected by connecting an

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-043455		
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.3	
	- Electronics Test Equipment - Sperry Part No. T-101058		

is project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

STABILIZATION UNIT ANALYZER
Part No. T-101058
(Sperry Gyroscope Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)

oscilloscope at the drift output jack of the analyzer and manually rotating the "degree drift" knob on the front panel until a null is reached on the oscilloscope. The degree of drift may then be read on the dial.

Power Supply: Power required is supplied by a Power Supply Junction Box Assembly, T-101126.

MANUFACTURERS' OR CONTRACTORS' DATA:

Sperry Gyroscope Company, Great Neck, Long Island, New York.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 33D5-5-22-1 (Operation and Service Instructions).
TO 33D5-5-22-4 (Parts Breakdown).

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Stabilization Unit Analyzer Sperry Part No. T-101058	Metal	7CAC-043455	20	21	16	70

ANALYZER, RANGE SERVO AMPLIFIER
Part No. T-101077
(Sperry Gyroscope Company)

FUNCTIONAL DESCRIPTION:

A portable depot level device which is used when performing a subassembly bench test on the range servo amplifier of Radar Synchronizer SN-57/APQ-31. The analyzer supplies voltage which the unit under test receives in normal operation, and provides a means of checking the maximum current, the gain, and the static unbalance of the unit.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: A receptacle is located in the top of the analyzer for the purpose of receiving the unit to be tested. All other operating controls are located on the front panel of the equipment. To perform a test cycle the unit to be tested is inserted in the receptacle and the set is energized. A vacuum tube voltmeter is attached to the error signal and ground jacks on the front panel. Two motor field current meters on the analyzer will register a condition of unbalance as the error control knob is rotated to the limit with the error signal-ground synchro switch in the ground synchro position. When the switch is in the error signal position

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-040700		

PROCUREM'T INFO.:
PROCUREM'T COG.: DESIGN COG.: Commercial
FUNCTIONAL CLASS. NO.: 10. 3
F.I.I.N.: Sperry T-101077
- Electronics Test Equipment -

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

ANALYZER, RANGE SERVO AMPLIFIER
Part No. T-101077
(Sperry Gyroscope Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)

the error control knob is rotated alternately to clockwise and counterclockwise positions. Readings indicated by the vacuum tube voltmeter in each extreme position are totaled to provide an indication of the performance of the unit under test.

Power Supply: 115 volts, AC, 400 cycles per second, single phase.

Meter Ranges: 0 to 130 volts, AC (one AC input meter).
0 to 50 milliamperes, DC (two motor field current meters).

MANUFACTURERS' OR CONTRACTORS' DATA:

Sperry Gyroscope Company, Division of the Sperry-Rand Corporation, Great Neck, Long Island, New York; Contract No. AF 33(038)14787.

TUBE COMPLEMENT:

1 JAN-5Y3, 2 JAN OD3/VR 150.

REFERENCE DATA AND LITERATURE:

TO 33D5-5-67-1 (Operation and Service Instructions).
TO 33D5-5-67-4 (Illustrations Parts Breakdown).

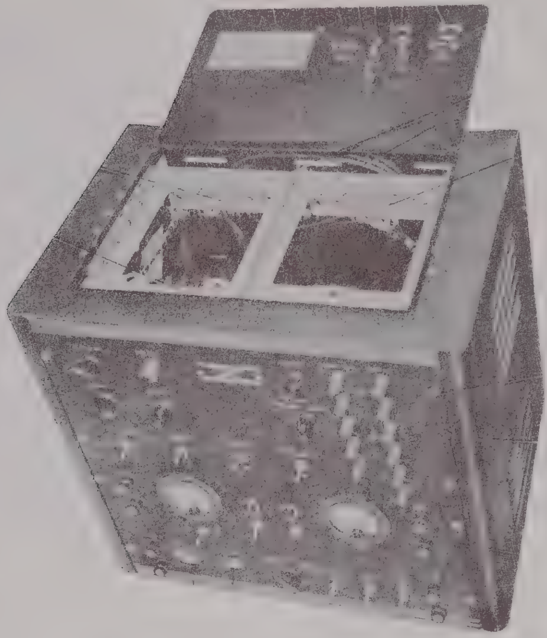
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
1	Analyzer, Range Servo Amplifier I. C. E. Sperry T-101077	5.74	26	20	21	54

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Analyzer, Range Servo Amplifier Sperry T-101077	Aluminum	7CAC-040700	12-3/4	19-3/4	12-3/4	25

AZIMUTH GENERATOR ANALYZER
Part No. T-101079
(Sperry Gyroscope Company)



FUNCTIONAL DESCRIPTION:

A portable unit which is used to provide all the signals and power requirements necessary to check and adjust the azimuth sweep and azimuth marker generators of the K-1A, K-2A, K-3A, and K-4A Bombing Navigational System. These generators are plug-in assemblies of the interconnection equipment for the bombing navigational system.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: Connections are made with the power supply by means of two power cables and receptacles. The generator under test is plugged into a special receptacle in the upper part of the analyzer. The input voltage of 400 cycles per second is rectified, regulated, and used to operate a pulse generator in the analyzer. The intensity gate, video, and range mark signals generated by the circuit of the analyzer are fed to the azimuth sweep generator under test. Input voltage of 60 cycles per second is used to operate a synchronous motor, which

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-038325		
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.:	Commercial
F.I.I.N.:		FUNCTIONAL CLASS. NO.:	10.3
	- Electronics Test Equipment	- Sperry Part No. T-101079	

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

AZIMUTH GENERATOR ANALYZER
Part No. T-101079
(Sperry Gyroscope Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)
in turn drives a cam and synchro. The cam and associated circuitry generate a pulse which is used as a reference in checking the azimuth sweep generator. The pulse is also used as an oscilloscope trigger when checking the stabilization synchro input of the generator. The synchro stator output voltage is employed in testing both the azimuth sweep and azimuth marker generators. A signal developed in the analyzer is used as an oscilloscope input signal. The reference mark signal, developed by the cam rotation, and the azimuth sweep signal are time-related. From these the operational quality of the generator under test is determined on the oscilloscope.

Power Supply: 115 volts, AC, 400 cycles per second at 5 amperes.
115 volts, AC, 60 cycles per second at 1 ampere.

Voltage Measuring Range: 0 to 130 volts, AC.
0 to 500 volts, DC.

MANUFACTURERS' OR CONTRACTORS' DATA:
Sperry Gyroscope Company, Great Neck, Long Island, New York.

TUBE COMPLEMENT:
1 JAN-1641, 1 JAN-5R4GY, 1 JAN-5Y3GT, 2 JAN-6AS7G, 1 JAN-6Y6G, 2 JAN-12AU7, 5 JAN-2C51, 1 JAN-OB2, 1 JAN-6097.

REFERENCE DATA AND LITERATURE:
TO 33D5-5-28-1 (Operation and Service Instructions).
TO 33D5-5-28-4 (Parts Breakdown).

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Azimuth Generator Analyzer Sperry Part No. T-101079	Metal	7CAC-038325	19-3/4	22-1/4	16-1/4	
2	Power Cable						
						Total:	55

PPI OFFSET ANALYZER
(PPI OFFSET TEST FIXTURE)
Part No. T-101081
(Sperry Gyroscope Company)

FUNCTIONAL DESCRIPTION:

A portable test fixture which supplies simulated operational voltages to the PPI offset unit, a part of the interconnection equipment of the K-type Bombing Navigational system. By indicating the output voltages or waveforms, it checks the operational functions of the PPI offset unit.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The analyzer circuit consists of a regulated power supply and voltmeter combination. The unit to be tested is plugged into a receptacle located in the top of the analyzer. When switches on the front panel of the analyzer are regulated, power is passed through the circuit and output and input voltages are read on the respective meters located on the analyzer. By setting the VTVM switch a signal from the analyzer is sent to the oscilloscope of the unit under test and the pattern is read to determine accuracy. The amplifier of the unit is

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-040400		

PROCUREM'T INFO.:
PROCUREM'T COG.: DESIGN COG.: Commercial
F.I.I.N.: FUNCTIONAL CLASS. NO.: 10.3
- Electronics Test Equipment - Sperry Part No. T-101081

is project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

PPI OFFSET ANALYZER
(PPI OFFSET TEST FIXTURE)
Part No. T-101081
(Sperry Gyroscope Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)
tested in a similar manner except that a reading is given on the output meter of the analyzer.

Power Supply: 115 volts, AC, 400 cycles per second, single-phase.

MANUFACTURERS' OR CONTRACTORS' DATA:
Sperry Gyroscope Company, Great Neck, Long Island, New York.

TUBE COMPLEMENT:
1 JAN-1641, 1 JAN-5R4GY, 1 JAN-5Y3GT, 2 JAN-6AS7G, 1 JAN-6Y6G, 2 JAN-12AU7, 1 JAN-2C51, 1 JAN-OB2.

REFERENCE DATA AND LITERATURE:
TO 33D5-3-7-1 (Operation and Service Instructions).
TO 33D5-3-7-4 (Parts Breakdown).

SHIPPING DATA:

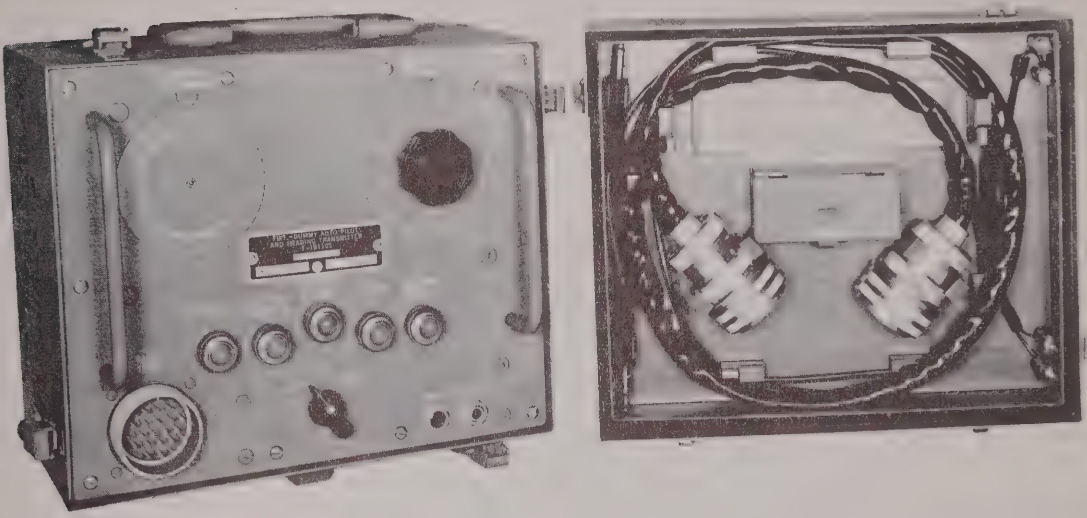
No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	PPI Offset Analyzer Sperry Part No. T-101081	Metal	7CAC-040400	14-3/4	23-3/4	16	35

FIXTURE, DUMMY AUTO PILOT AND HEADING TRANSMITTER

Part No. T-101105
(Sperry Gyroscope Company)



FUNCTIONAL DESCRIPTION:

This fixture is used with type A-1 Test Bench Group in testing the A-1A Bombing Navigational Computer. The fixture provides for the independent and simultaneous testing of the stabilization and computer sections of the A-1A Computer. It also provides a dummy automatic pilot for indicating and measuring the data furnished to the automatic pilot of the computer under test.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The true heading circuit consists of two synchros which replace the coarse and fine synchros associated with the computer under test. The dummy automatic pilot circuit is a control circuit consisting of indicator lights and a jack.

A selector knob makes it possible to connect the coarse and fine synchros in parallel with the respective synchros of the A-1 Computer. Thus the stator output of the synchros under test can be measured through the fixture.

The indicator lights of the control circuit coincide with the switches and relays of the automatic pilot being tested. Correct functioning of these switches and relays causes the respective lamps to light.

Power Supply: 26.5 volts, DC; 26 volts, AC, single phase, 400 cycles per second.

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7800-075650		

PROCUREM'T INFO.:
PROCUREM'T COG.: DESIGN COG.: Commercial
F.I.I.N.: FUNCTIONAL CLASS. NO.: 10.3
Sperry T-101105
- Electronics Test Equipment -

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

FIXTURE, DUMMY AUTO PILOT AND HEADING TRANSMITTER
Part No. T-101105
(Sperry Gyroscope Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)
Dial Calibrations: Coarse Synchro: 0 to 360 with 36 divisions.
Fine Synchro: 0 to 10 with 100 divisions.

MANUFACTURERS' OR CONTRACTORS' DATA:

Sperry Gyroscope Company, Division of the Sperry-Rand Corporation, Great Neck, Long Island, New York; AF Contract No. W33-038ac-22237.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 33D5-12-14-1 (Operation and Service Instructions).
TO 33D5-12-14-4 (Illustrated Parts Breakdown).

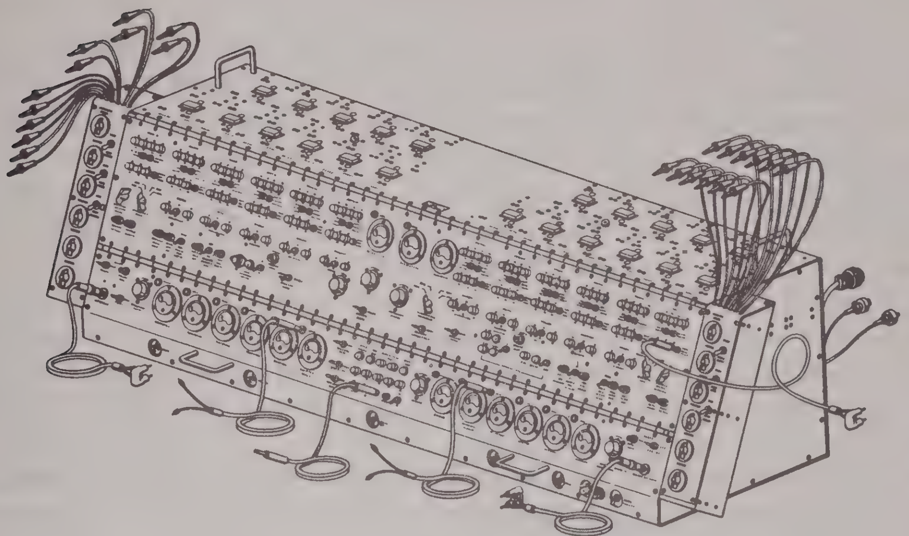
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
1	Fixture, Dummy Auto Pilot and Heading Transmitter (Sperry T-101105)	2.17	17	17	13	21

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Fixture, Dummy Auto Pilot and Heading Transmitter (Sperry T-101105)	Aluminum	7800-075650	9-1/4	12	10-1/4	14

FIXTURE, AMPLIFIER AGING AND TESTING
Part No. T-101270
(Sperry Gyroscope Company)



FUNCTIONAL DESCRIPTION:

This fixture is a depot level instrument designed to test and age DC amplifiers types AH, MAH, BH, CH, MCH, DH, MDH, and XH and to age AC amplifiers types HH, IH, JH, KH, LH, PH, VH, and WH. These amplifiers are parts of Bombing Navigational Systems types K-1A, K-2A, K-3A, K-4A, MA-6A, and MA-7A.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The fixture consists of a panel assembly, two decade box assemblies, a dual voltage regulator assembly, and a housing assembly.

Panel Assembly: The panel assembly contains the controls, meters, jacks, and indicators necessary in the testing of the amplifier. These panel components are duplicated with one complement mounted on the left half of the panel and the other complement mounted on the right half. This permits the simultaneous testing of two amplifiers. The fixture also permits the simultaneous aging of up to twenty amplifiers. Each of the amplifier test positions is designed to provide the amplifier with the required vacuum tube plate, screen, and filament voltages as well as appropriate signal and feedback inputs. Since the power, signal, and feedback input voltages are maintained at a specified level, the output of the am-

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-287956-3		

PROCUREM'T INFO.:
PROCUREM'T COG.: DESIGN COG.: Commercial
F.I.I.N.: FUNCTIONAL CLASS. NO.: 10.3
- Electronics Test Equipment - Sperry T-101270

Carl L. Frederick, Bethesda, Md. - Multilithed in U.S.A.
This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC

FIXTURE, AMPLIFIER AGING AND TESTING
Part No. T-101270
(Sperry Gyroscope Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)
plifier, if it is serviceable, should correspond with the required test values. The panel assembly contains meters for indicating the amount of current flowing in, and the voltage being applied to, the input and output circuits of the fixture. Controls are provided to permit the following functions: (a) adjusting the phase and voltage of the input signal to the amplifier, (b) adjusting the resistive loads in the various circuits of the amplifier, (c) applying a simulated feedback input to the amplifier, (d) adjusting the current flowing through the differential or output milliammeters, (e) selecting the desired sensitivity for the differential meters, (f) selecting the desired range for the differential meters, the output current meters, and the checkmeter, (g) adjusting the filament voltage applied to the amplifier, (h) adjusting the voltage and current in the aging circuits, (i) controlling the reference voltage and power supply circuits. Jacks are provided for connecting external auxiliary meters.

Decade Box Assemblies: The two decade box assemblies are mounted one at each side of the fixture panel. They are used to provide a means of obtaining various resistor combinations necessary for balancing the amplifier. The decade boxes are electrically connected to the amplifier under test by means of test loads. Each decade box contains six double-pole, twelve-position rotary switches for selecting the desired resistance.

Voltage Regulator: The dual voltage regulator is contained within the fixture assembly. The function of the voltage regulator is to convert unregulated DC from the power source to regulated DC. The voltage regulator circuit utilizes a conventional input filter, a gate tube circuit, a control amplifier circuit, and a glow-discharge type regulator tube.

Power Supply: 115 ± 5 volts, AC, 60 cycles per second, single-phase.
115 ± 5 volts, AC, 400 cycles per second, single-phase, with harmonic rms voltage not exceeding 2% of the fundamental.
Unregulated 450 ± 5 volts, DC, from a source having a minimum capacity of 500 milliamperes. Unregulated 320 ± 5 volts, DC, from a source having a minimum capacity of 500 milliamperes.

MANUFACTURERS' OR CONTRACTORS' DATA:
Sperry Gyroscope Company, Division of the Sperry-Rand Corporation, Great Neck, Long Island, New York; Contract AF33(038)14787.

TUBE COMPLEMENT:
2 JAN-6AS7, 2 JAN-OA2, 2 JAN-6SL7.

REFERENCE DATA AND LITERATURE:
TO 33D5-5-76-1 (Operation and Service Instructions).
TO 33D5-5-76-4 (Parts Breakdown).

FIXTURE, AMPLIFIER AGING AND TESTING
Part No. T-101270
(Sperry Gyroscope Company)

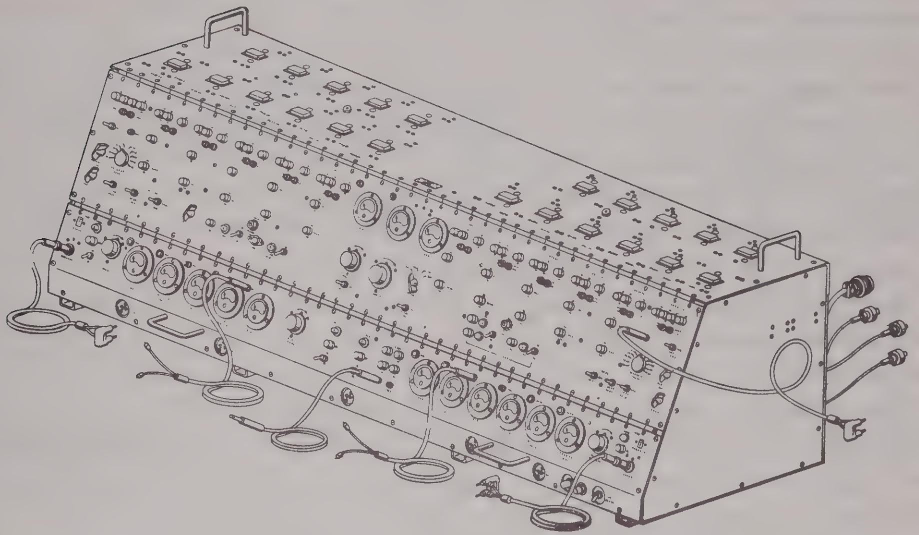
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Fixture Amplifier Aging and Testing (Sperry T-101270)	Metal	7CAC-287956-3	21-3/4	91-1/4	25-1/4	250

FIXTURE, AMPLIFIER AGING AND TESTING
Part No. T-101271
(Sperry Gyroscope Company)



FUNCTIONAL DESCRIPTION:

The fixture is a depot level instrument designed to test AC amplifier types MH and V and to age AC amplifier Types HH, IH, JH, KH, LH, MH, PH, UH, and WH. These amplifiers are a part of Bombing Navigational Systems types K-1A, K-2A, K-3A, K-4A, MA-6A, and MA-7A.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The fixture consists of a panel assembly, a dual voltage regulator assembly, a frequency converter assembly, and a housing assembly.

Panel Assembly: The panel assembly contains the controls, meters, jacks, and indicators necessary in the testing of the amplifier. These panel components are duplicated with one complement mounted on the left half of the panel and the other complement mounted on the right half. This permits the simultaneous testing of two amplifiers or the simultaneous aging of up to twenty amplifiers. Each of the amplifier test positions is designed to provide the amplifier with the required vacuum tube plate, screen, and filament voltages, as well as appropriate signal and feedback inputs. Since the power, signal, and feedback input voltages are maintained at a specified level, the output of the amplifier, if it is serviceable,

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-287956-4		
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.3	
	- Electronics Test Equipment -		Sperry T-101271

and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U.S.A.
his project was supported by the USAF on Contract AF 33(600)28276

FIXTURE, AMPLIFIER AGING AND TESTING
Part No. T-101271
(Sperry Gyroscope Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)

should correspond with the required test values. The panel assembly contains meters for indicating the amount of current flowing in, and the voltage being applied to, the input and output circuits of the fixture. Controls are provided to permit the following functions: (a) adjusting the phase and voltage of the input signal to the amplifier, (b) adjusting the resistive loads in the various circuits of the amplifier, (c) applying power to the torque motor input circuit of the fixture, (d) selecting the desired range for the check meter, (e) adjusting the filament voltage applied to the amplifier, (f) adjusting the voltage and current in the aging circuits, (g) controlling the reference voltage and power supply circuits. Jacks are provided for connecting external auxiliary meters.

Voltage Regulator: The dual voltage regulator is contained within the fixture assembly. The voltage regulator converts unregulated DC from the power source to regulated DC. The voltage regulator circuit utilizes a conventional input filter, a gate tube circuit, a control amplifier circuit, and a glow-discharge type regulator tube.

Frequency Converter Assembly: The frequency converter assembly converts a 115-volt, 400 cycles per second reference voltage to a 1.2 volts, 800 cycles per second signal voltage which is slightly out of phase with respect to the reference voltage.

Power Supply: 115 ± 5 volts, AC, 60 cycles per second, single-phase; 115 ± 5 volts, AC, 400 cycles per second, single-phase, with harmonic rms voltage not exceeding 2% of the fundamental. Unregulated 450 ± 5 volts, DC, from a source having a minimum capacity of 500 milliamperes. Unregulated 320 ± 5 volts, DC, from a source having a minimum capacity of 500 milliamperes. Unregulated 27 ± 5 volts, DC, from a source having a minimum capacity of two amperes.

MANUFACTURERS' OR CONTRACTORS' DATA:

Sperry Gyroscope Company, Division of Sperry-Rand Corporation, Great Neck, Long Island, New York.

TUBE COMPLEMENT:

2 JAN-6AS7, 2 JAN-OA2, 2 JAN-6SL7, 2 JAN-6X5.

REFERENCE DATA AND LITERATURE:

TO 33D5-5-90-1 (Operation and Service Instructions).

SHIPPING DATA:

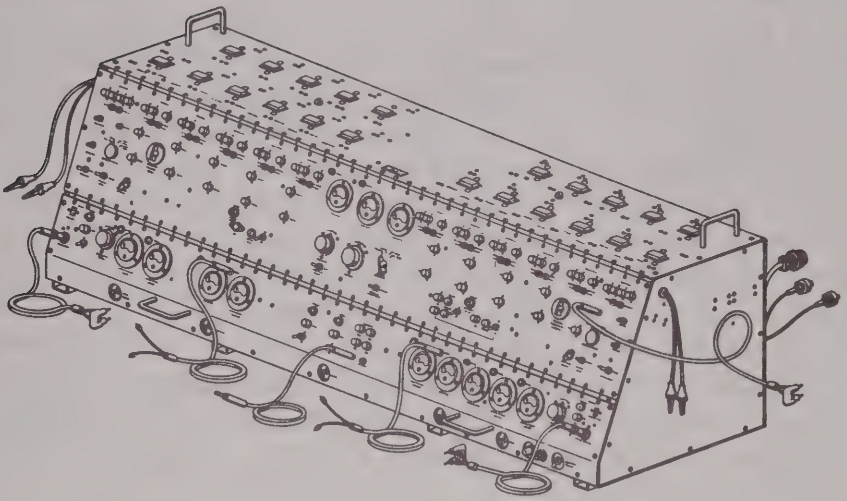
No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

FIXTURE, AMPLIFIER AGING AND TESTING
Part No. T-101271
(Sperry Gyroscope Company)

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	**Fixture, Amplifier Aging and Testing (Sperry T-101271)**	Metal	7CAC-287956-4	21-3/4	82	25-1/4	200

FIXTURE, AMPLIFIER AGING AND TESTING
Part No. T-101272
(Sperry Gyroscope Company)



FUNCTIONAL DESCRIPTION:

The fixture is a depot level instrument designed to test and age AC amplifiers types IH, JH, LH, and UH and to age AC amplifiers types HH, KH, MH, PH, and WH. These amplifiers are parts of Bombing Navigational Systems type K-1A, K-2A, K-3A, K-4A, MA-6A, and MA-7A.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The fixture consists of a panel assembly, a dual voltage regulator assembly, and a housing assembly.

Panel Assembly: The panel assembly contains the controls, meters, jacks, and indicators necessary in the testing of the amplifier. These panel components are duplicated with one complement mounted on the left half of the panel and the other complement mounted on the right half. This permits the simultaneous testing of two amplifiers. The fixture also permits the simultaneous aging of up to twenty amplifiers. Each of the amplifier test positions is designed to provide the amplifier with the required vacuum tube plate, screen, and filament voltages as well as appropriate signal and feedback inputs. Since the power, signal, and feedback input voltages are maintained at a specified level, the output of the amplifier, if it is serviceable, should correspond with the required test values. The panel

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-287956-5		
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.3	
	- Electronics Test Equipment -		Sperry T-101272

his project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U.S.A.

FIXTURE, AMPLIFIER AGING AND TESTING
Part No. T-101272
(Sperry Gyroscope Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)

assembly contains meters for indicating the amount of current flowing in, and the voltage being applied to, the input and output circuits of the fixture. Controls are provided to permit the following functions: (a) adjusting the phase and voltage of the input signal to the amplifier, (b) adjusting the resistive loads in the various circuits of the amplifier, (c) selecting the desired meter for reading the input and output voltages, (d) selecting the desired range for the check meter, (e) controlling the power to the voltage regulator, (f) adjusting the filament voltage applied to the amplifier, (g) adjusting the voltage and current in the aging circuits, (h) controlling the reference voltage and power supply circuits. Jacks are provided for connecting external auxiliary meters.

Voltage Regulator: The dual voltage regulator is contained within the fixture assembly. The function of the voltage regulator is to convert unregulated DC from the power source to regulated DC. The voltage regulator circuit utilizes a conventional input filter, a gate tube circuit, a control amplifier circuit, and a glow-discharge type regulator tube.

Power Supply: 115 ± 5 volts, AC, 60 cycles per second, single-phase, 115 ± 5 volts, AC, 400 cycles per second, single-phase, with harmonic rms voltage not exceeding 2% of the fundamental. Unregulated 450 ± 5 volts, DC, from a source having a minimum capacity of 500 milliamperes. Unregulated 320 ± 5 volts, DC, from a source having a minimum capacity of 500 milliamperes.

MANUFACTURERS' OR CONTRACTORS' DATA:

Sperry Gyroscope Company, Division of Sperry-Rand Corporation, Great Neck, Long Island, New York; Contract AF 33(038)14787.

TUBE COMPLEMENT:

2 JAN-6AS7, 2 JAN-OA2, 2 JAN-6SL7.

REFERENCE DATA AND LITERATURE:

TO 33D5-5-89-1 (Operation and Service Instructions).

SHIPPING DATA:

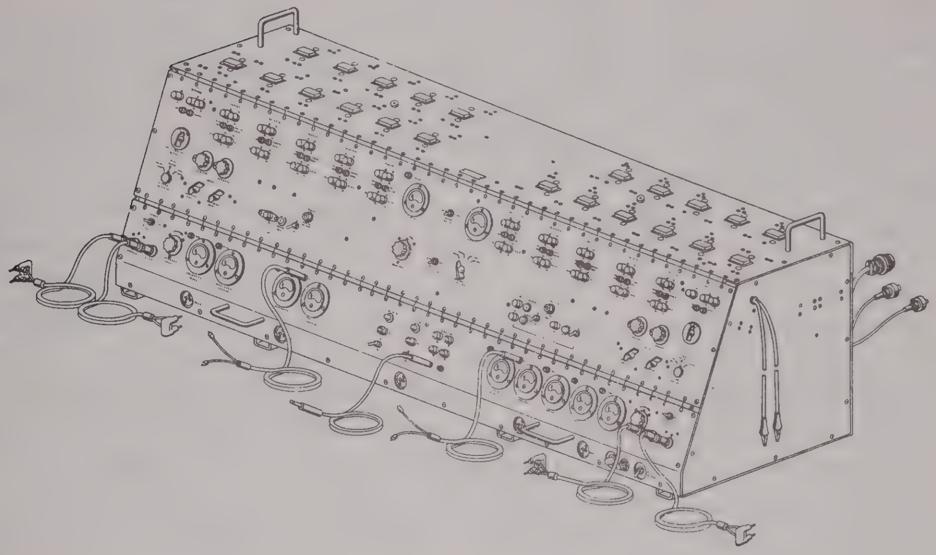
No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

FIXTURE, AMPLIFIER AGING AND TESTING
Part No. T-101272
(Sperry Gyroscope Company)

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	**Fixture, Amplifier Aging and Testing (Sperry T-101272)**		7CAC-287956-5	21-3/4	82	25-1/4	200

FIXTURE, AMPLIFIER AGING AND TESTING
Part No. T-101273
(Sperry Gyroscope Company)



FUNCTIONAL DESCRIPTION:

This fixture is a depot level instrument designed to test and age AC amplifiers Type PH and to age amplifiers types HH, KH, and WH. These amplifiers are parts of Bombing Navigational Systems Type K-1A, K-2A, K-3A, K-4A, MA-6A, and MA-7A.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The fixture consists of a panel assembly, a dual voltage regulator assembly, and a housing assembly.

Panel Assembly: The panel assembly contains the controls, meters, jacks, and indicators necessary in the testing of the amplifier. These panel components are duplicated with one complement mounted on the left half of the panel and the other complement mounted on the right half. This permits the simultaneous testing of two amplifiers. The fixture also permits the simultaneous aging of up to twenty amplifiers. Each of the amplifier test positions is designed to provide the amplifier with the required vacuum tube plate, screen, and filament voltages as well as appropriate signal and feedback inputs. Since the power, signal, and feedback

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-287956-6		
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.:	10.3
	- Electronics Test Equipment -		Sperry T-101273

is project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U.S.A

FIXTURE, AMPLIFIER AGING AND TESTING
Part No. T-101273
(Sperry Gyroscope Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)
input voltages are maintained at a specified level, the output of the amplifier, if it is serviceable, should correspond with the required test values. The panel assembly contains meters for indicating the amount of current flowing in, and the voltage being applied to, the input and output circuits of the fixture. Controls are provided to permit the following functions: (a) adjusting the phase and voltage of the input signal to the amplifier, (b) adjusting the feedback resistance in the amplifier circuit, (c) selecting the desired range for the checkmeter, (d) providing a means of turning the resolver rotors in the panel assembly, (e) adjusting the filament voltage applied to the amplifier, (f) adjusting the voltage and current in the aging circuits, (g) controlling the power supply circuits. Jacks are provided for connecting external auxiliary meters and oscilloscopes.

Voltage Regulator: The dual voltage regulator is contained within the fixture assembly. The function of the voltage regulator is to convert unregulated DC from the power source to regulated DC. The voltage regulated circuit utilizes a conventional input filter, a gate tube circuit, a control amplifier circuit, and a glow-discharge type regulator tube.

Power Supply: 115 ± 5 volts, AC, 60 cycles per second, single-phase; 115 ± 5 volts, AC, 400 cycles per second, single-phase; with harmonic rms voltage not exceeding 2% of the fundamental. Unregulated 450 ± 5 volts, DC, from a source having a minimum capacity of 500 milliamperes.

MANUFACTURER'S OR CONTRACTORS' DATA:
Sperry Gyroscope Company, Division of the Sperry-Rand Corporation, Great Neck, Long Island, New York; Contract AF 33(038)14787.

TUBE COMPLEMENT:
2 JAN-6AS7, 2 JAN-OA2, 2 JAN-6SL7.

REFERENCE DATA AND LITERATURE:
TO 33D5-5-86-1 (Operation and Service Instructions).
TO 33D5-5-86-4 (Parts Breakdown).

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

FIXTURE, AMPLIFIER AGING AND TESTING
Part No. T-101273
(Sperry Gyroscope Company)

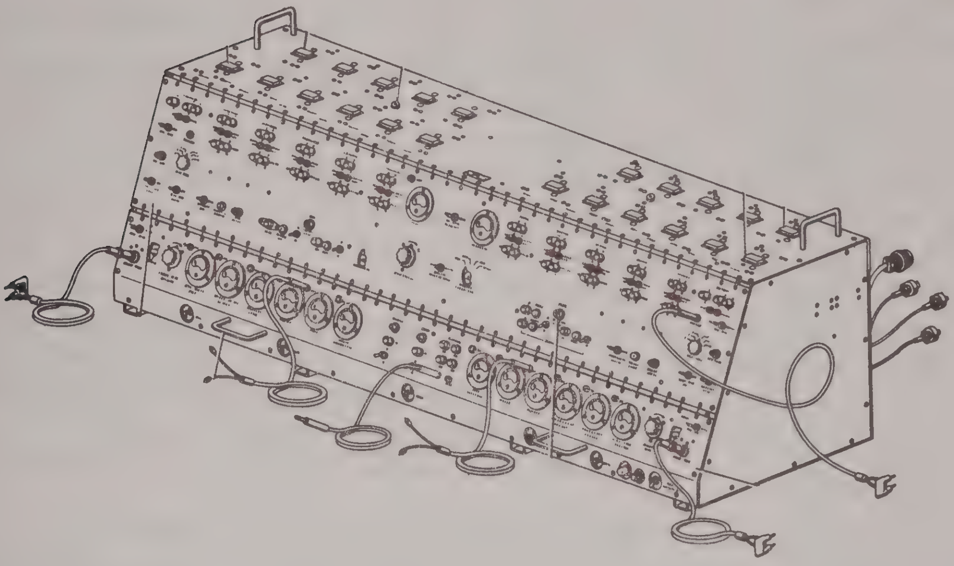
EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Fixture, Amplifier Aging and Testing (Sperry T-101273)	Metal	7CAC-287956-6	21-3/4	82	25-1/4	200

FIXTURE, AMPLIFIER AGING AND TESTING

Part No. T-101274

(Sperry Gyroscope Company)



FUNCTIONAL DESCRIPTION:

The fixture is a depot level instrument designed to test and age AC amplifier Type KH, and to age amplifiers Types HH, IH, JH, PH, UH, and WH. These amplifiers are parts of Bombing Navigational Systems Types K-1A, K-2A, K-3A, K-4A, MA-6A, and MA-7A.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The fixture consists of a panel assembly, a dual voltage regulator assembly, and a housing assembly.

Panel Assembly: The panel assembly contains the controls, meters, jacks, and indicators necessary in the testing of the amplifier. These panel components are duplicated with one complement mounted on the left half of the panel and the other complement mounted on the right half. This permits the simultaneous testing of two amplifiers. The fixture also permits the simultaneous aging of up to twenty amplifiers. Each of the amplifiers test positions is designed to provide the amplifier with the required vacuum tube plate, screen, and filament voltages as well as the approximate signal and feedback inputs. Since the power, signal, and feed-

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-287956-7		
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.:	10.3
	- Electronics Test Equipment -		Sperry T-101274

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A

FIXTURE, AMPLIFIER AGING AND TESTING
Part No. T-101274
(Sperry Gyroscope Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)
back input voltages are maintained at a specified level, the output of the amplifier, if it is serviceable, should correspond with the required test values. The panel assembly contains meters for indicating the amount of current flowing in, and the voltage being applied to, the input and output circuits of the fixture. Controls are provided to permit the following functions: (a) selecting the desired amplifier filament supply circuit to be read on the filament voltmeter, (b) selecting the desired amplifier input circuits to which the test voltage is to be applied, (c) selecting either the input or the output of the amplifier to permit reading the voltage on an external vacuum tube voltmeter, (d) checking the continuity of the relay contacts of the amplifier under test, (e) controlling the power supply voltage, (f) selecting the checkmeter range desired, (g) controlling the test voltage supplied to the relay coils in the amplifier under test.

Panel Assembly: Jacks are provided for connecting external auxiliary meters or oscilloscopes.

Voltage Regulator: The dual voltage regulator is contained within the fixture assembly. The function of the voltage regulator is to convert unregulated DC from the power source to regulated DC. The voltage regulator circuit utilizes a conventional input filter, a gate tube circuit, a control amplifier circuit, and a glow-discharge type regulator tube.

Power Supply: 115 ± 5 volts, AC, 60 cycles per second, single-phase, 115 ± 5 volts, AC, 400 cycles per second, single-phase, with harmonic rms voltage not exceeding 2% of the fundamental. Unregulated 450 ± 5 volts, DC, from a source having a minimum capacity of 500 milliamperes. Unregulated 320 ± 5 volts, DC, from a source having a minimum capacity of 500 milliamperes. Unregulated 27 ± 5 volts, DC, from a source having a minimum capacity of one ampere.

MANUFACTURERS' OR CONTRACTORS' DATA:
Sperry Gyroscope Company, Division of the Sperry-Rand Corporation, Great Neck, Long Island, New York; Contract AF 33(038)14787.

TUBE COMPLEMENT:
2 JAN-6AS7, 2 JAN-OA2, 2 JAN-6SL7.

REFERENCE DATA AND LITERATURE:
TO 33D5-5-85-1 (Operation and Service Instructions).

FIXTURE, AMPLIFIER AGING AND TESTING
Part No. T-101274
(Sperry Gyroscope Company)

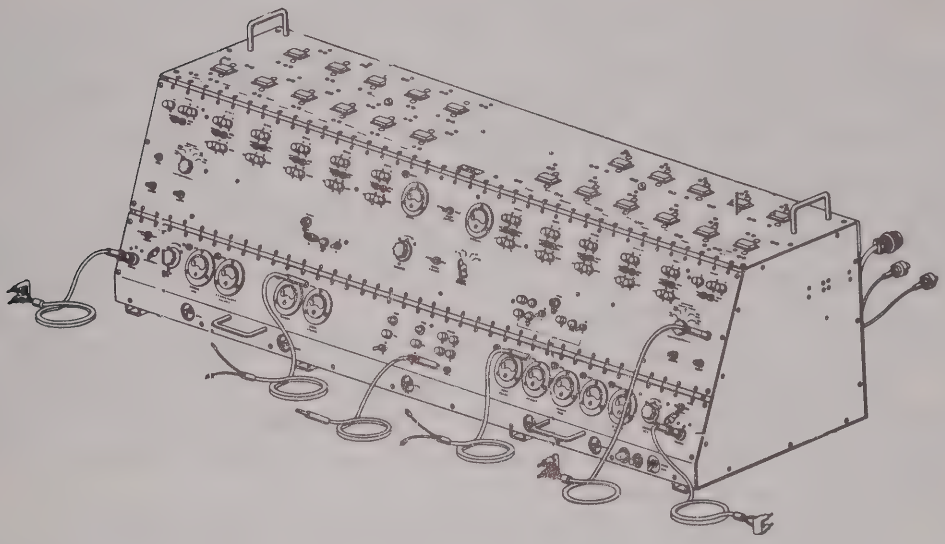
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Fixture, Amplifier Aging and Testing (Sperry T-101274)	Metal	7CAC-287956-7	21-3/4	91-1/4	25-1/4	

FIXTURE, AMPLIFIER AGING AND TESTING
Part No. T-101275
(Sperry Gyroscope Company)



FUNCTIONAL DESCRIPTION:

The fixture is a depot level instrument designed to test and age AC amplifiers types HH and WH and to age AC amplifiers types IH, JH, KH, PH, and UH. These amplifiers are parts of Bombing-Navigational Systems types K-1A, K-2A, K-3A, K-4A, MA-6A, and MA-7A.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The fixture consists of a panel assembly, a dual voltage regulator assembly, and a housing assembly.

Panel Assembly: The panel assembly contains the controls, meters, jacks, and indicators necessary in the testing of the amplifier. These panel components are duplicated with one complement mounted on the left half of the panel and the other complement mounted on the right half. This permits the simultaneous testing of two amplifiers. The fixture also permits the simultaneous aging of up to twenty amplifiers. Each of the amplifier test positions is designed to provide the amplifier with the required vacuum tube plate, screen, and filament voltages as well as appropriate signal and feedback inputs. Since the power, signal, and feedback input voltages are maintained at a specified level, the output of the ampli-

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-287956-8		
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.3	
	- Electronics Test Equipment -		Sperry T-101275

is project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

FIXTURE, AMPLIFIER AGING AND TESTING
Part No. T-101275
(Sperry Gyroscope Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)

fier, if it is serviceable, should correspond with the required test values. The panel assembly contains meters for indicating the amount of current flowing in, and the voltage being applied to, the input and output circuits of the fixture. Controls are provided to permit the following functions: (a) controlling the AC and DC voltages to the dual voltage regulator, (b) selecting the desired range of the checkmeter, (c) applying a simulated feedback input to the amplifier, (d) applying a variable resistance load on the output of the amplifier, (e) controlling the AC and DC power supply circuits. Jacks are provided for connecting external auxiliary meters and oscilloscopes.

Voltage Regulator: The dual voltage regulator is contained within the fixture assembly. The function of the voltage regulator is to convert unregulated DC from the power source to regulated DC. The voltage regulator circuit utilizes a conventional input filter, a gate tube circuit, a control amplifier circuit, and a glow-discharge type regulator tube.

Power Supply: 115 ± 5 volts, AC, 60 cycles per second, single-phase; 115 ± 5 volts, AC, 400 cycles per second, single-phase, with harmonic rms voltage not exceeding 2% of the fundamental. Unregulated 450 ± 5 volts, DC, from a source having a minimum capacity of 500 milliamperes. Unregulated 320 ± 5 volts, DC, from a source having a minimum capacity of 500 milliamperes.

MANUFACTURERS' OR CONTRACTORS' DATA:

Sperry Gyroscope Company, Division of Sperry-Rand Corporation, Great Neck, Long Island, New York; Contract AF 33(038)14787.

TUBE COMPLEMENT:

2 JAN-6AS7, 2 JAN-OA2, 2 JAN-6SL7.

REFERENCE DATA AND LITERATURE:

TO 33D5-5-88-1 (Operation and Service Instructions).

SHIPPING DATA:

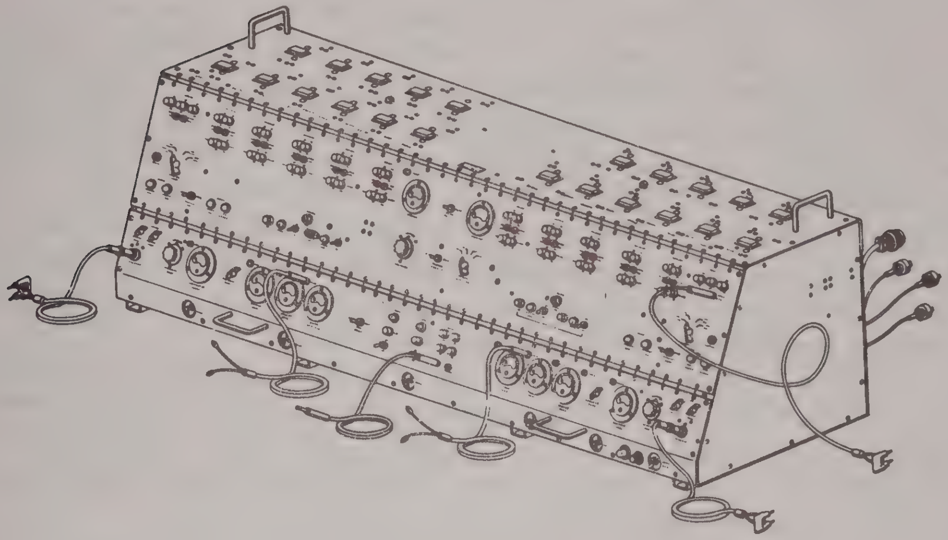
No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

FIXTURE, AMPLIFIER AGING AND TESTING
Part No. T-101275
(Sperry Gyroscope Company)

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Fixture, Amplifier Aging and Testing (Sperry T-101275)	Metal	7CAC-287956-8	21-3/4	91-1/4	25-1/4	250

FIXTURE, AMPLIFIER AGING AND TESTING
Part No. T-101276
(Sperry Gyroscope Company)



FUNCTIONAL DESCRIPTION:

The fixture is a depot level instrument designed to test and age AC amplifiers Type SH and to age AC amplifiers Types HH, KH, PH, and WH. These amplifiers are parts of Bombing Navigational Systems Types K-1A, K-2A, K-3A, K-4A, MA-6A and MA-7A.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The fixture consists of a panel assembly, a dual voltage regulator assembly, and a housing assembly.

Panel Assembly: The panel assembly contains the controls, meters, jacks, and indicators necessary in the testing of the amplifier. These panel components are duplicated with one complement mounted on the left half of the panel and the other complement mounted on the right half. This permits the simultaneous testing of two amplifiers. The fixture also permits the simultaneous aging of up to twenty amplifiers. Each of the amplifier test positions is designed to provide the amplifier with the required vacuum tube plate, screen, and filament voltages as well as appropriate signal and feedback inputs. Since the power, signal, and feed-

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-287956-9		

PROCUREM'T INFO.:
PROCUREM'T COG.: DESIGN COG.: Commercial
F.I.I.N.: FUNCTIONAL CLASS. NO.: 10.3
- Electronics Test Equipment - Sperry T-101276

Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A
is project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A

FIXTURE, AMPLIFIER AGING AND TESTING

Part No. T-101276

(Sperry Gyroscope Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)

back input voltages and maintained at a specified level, the output of the amplifier, if it is serviceable, should correspond with the required test values. The panel assembly contains meters for indicating the amount of current flowing in, and the voltage being applied to the input and output circuits of the fixture. Controls are provided to permit the following functions: (a) selecting the desired range for the checkmeter, (b) selecting and controlling the A or B level input voltages applied to the test positions, (c) controlling and adjusting the DC voltages applied to the aging and testing positions, (d) controlling the power supply voltages, (e) controlling the supply to the voltage regulator. Jacks are provided for connecting external auxiliary meters and oscilloscopes.

Voltage Regulator: The dual voltage regulator is contained within the fixture assembly. The function of the voltage regulator is to convert unregulated DC from the power source to regulated DC. The voltage regulated circuit utilizes a conventional input filter, a gate tube circuit, a control amplifier circuit, and a glow-discharge type regulator tube.

Power Supply: 115 ± 5 volts, AC, 60 cycles per second, single-phase; 115 ± 5 volts, AC, 400 cycles per second, single-phase, with harmonic rms voltage not exceeding 2% of the fundamental. Unregulated 27 volts, DC, from a source having a minimum capacity of three amperes. Unregulated 320 ± 5 volts, DC, from a source having a minimum capacity of 500 milliamperes.

MANUFACTURERS' OR CONTRACTORS' DATA:

Sperry Gyroscope Company, Division of the Sperry-Rand Corporation, Great Neck, Long Island, New York; Contract AF 33(038)14787.

TUBE COMPLEMENT:

2 JAN-6AS7, 2 JAN-OA2, 2 JAN-6SL7.

REFERENCE DATA AND LITERATURE:

TO 33D5-5-87-1 (Operation and Service Instructions).

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
1	Fixture, Amplifier Aging and Testing (Sperry T-101276)					

FIXTURE, AMPLIFIER AGING AND TESTING

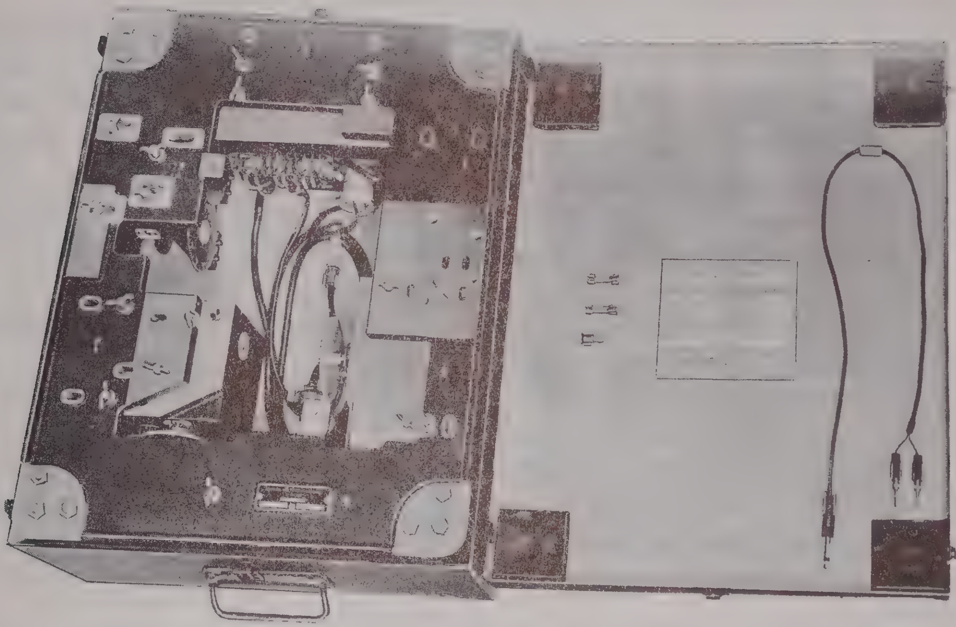
Part No. T-101276

(Sperry Gyroscope Company)

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Fixture, Amplifier Aging and Testing (Sperry T-101276)	Metal	7CAC-287956-9	21-3/4	82	25-1/4	200

TESTER, MULTIPLIER ASSEMBLY
Part No. T-101286
(Sperry Gyroscope Company)



FUNCTIONAL DESCRIPTION:

A portable depot level tool which provides mechanical and functional checks of the multiplier assembly of the Tracking Computer type B-2 and B-2A when completing an overhaul of the unit. The tracking computer is a component of the A-1A Bombing-Navigational Computer.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The circuitry consists of switches, an indicator lamp, a synchro, cable connectors, and terminal jacks. Only one of the four subassemblies of the tester requires power for its operation. When the power switch on this subassembly is placed in the "Test" position a current is fed into the fine synchro rotor of the unit under test. A voltage is then induced in the fine synchro stator and is transmitted to the tester synchro stator coils. The tester synchro rotor is then turned until it reaches a null heading with respect to its stator coil. The null heading can be observed by means of a vacuum tube voltmeter connected to the

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-812300		
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.3	
	- Electronics Test Equipment -		Sperry T-101286

his project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

TESTER, MULTIPLIER ASSEMBLY
Part No. T-101286
(Sperry Gyroscope Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)

terminal jacks. The amount of rotation of the tester dial is an indication of the heading of the fine synchro rotor of the unit under test. The dial of this subassembly indicates the fine value of the $T_I V_A$ (Time-to-impact-True Airspeed) as computed by the unit under test. When the power switch is placed in the "Calibrate" position a cable may be connected to the tester synchro rotor leads. This provides a means of using the Synchro Zeroing Tester Assembly T-101020 to set the tester synchro on electrical zero. The uses of the other three subassemblies are as follows:

(1) V_A (True Airspeed) assembly - used to manually set in a predetermined value of true airspeed to the unit under test.

(2) $W_E W_N$ (East and Northcomponents of wind velocity) assembly - used to manually set in a predetermined value of wind to the unit under test.

(3) $T_I W_{E-N}$ (Time-to-impact-East and North Components of wind velocity) assembly - used to indicate by means of dials the value of $T_I W_{N-S}$ (Time-to-impact - North and South Components of wind velocity) and $T_I W_{E-W}$ (Time-to-impact - East and West Components of wind velocity) as computed by the unit under test.

These three subassemblies are geared units by means of which a mechanical input is transmitted by a gear assembly into a mechanical output. The rotation speed of the input gear is multiplied by the gear assembly and read on a fine indicator dial.

Power Supply: 26 volts, AC, 400 cycles per second, single-phase.

MANUFACTURERS' OR CONTRACTORS' DATA:

Sperry Gyroscope Company, Division of the Sperry-Rand Corporation, Great Neck, Long Island, New York; Contract No. AF 33(600)6565.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 33D5-5-75-1 (Operation and Service Instructions).

TO 33D5-5-75-4 (Illustrated Parts Breakdown).

SHIPPING DATA:

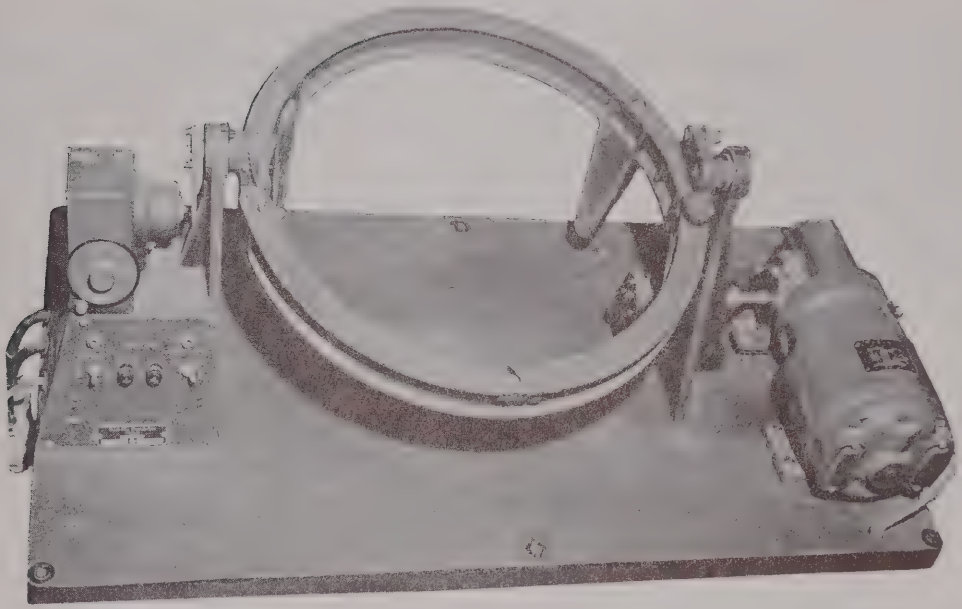
No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
1	Tester, Multiplier Assembly, (Sperry T-101286)	6.32	30	26	14	86

TESTER, MULTIPLIER ASSEMBLY
Part No. T-101286
(Sperry Gyroscope Company)

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Tester, Multiplier Assembly (Sperry T-101286)	Metal	7CAC-812300	9-1/4	24-1/8	20	
1	Cable Assembly						
						Total:	66

STAND, ROLL STABILIZATION
Part No. T-101439
(Sperry Gyroscope Company)



FUNCTIONAL DESCRIPTION:

This stand is a depot level test device designed to simulate actual flight conditions by producing roll or pitch motion on the Periscopic Bombsight Stabilizer Type B-1 which is a component of the Bombing Navigational Computer Type A-1A or ME-5, which is part of the Bombing Navigational Systems Type K-3A, K-4A, MA-6A or MA-7A.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The stand consists of a fixed base and a ring assembly which can be made to roll or pitch. A motor is geared to one end of the ring assembly axis of rotation and a synchro is geared to the other end. A panel assembly contains the following controls:

1. On, Off, Jog Switch. This switch turns on the motor which rocks the ring assembly. In the jog position it operates as a momentary on switch to produce a jog motion to the ring assembly.

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-738235		

PROCUREM'T INFO.:
PROCUREM'T COG.: DESIGN COG.: Commercial
F.I.I.N.: FUNCTIONAL CLASS. NO.: 10.3
- Electronics Test Equipment - Sperry T-101439

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

STAND, ROLL STABILIZATION
Part No. T-101439
(Sperry Gyroscope Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)

2. Roll, Pitch Switch. This switch changes the input for the stand synchro to either the roll or the pitch signals as received from the stabilizer.

3. Min Dial. This dial indicates the error in minutes of arc in the roll or pitch servo loops, and is used to reposition the stand synchro stator to permit zeroing of the error signal while observing the error signals on an auxiliary oscilloscope. A reference jack is mounted on the panel to provide a reference voltage for analyzing the synchro error signal. The vertical plates of the oscilloscope are plugged in to this jack. A roll or pitch jack also on the panel provides a roll or pitch synchro error signal outlet. The oscilloscope horizontal plates are plugged in to this jack.

Power Supply: 115 volts, 60 cycles per second, AC, single-phase.
Ring Assembly Oscillation Frequency: 11 cycles per minute.
Ring Assembly Inclination: 12-1/2 degrees.

MANUFACTURERS' OR CONTRACTORS' DATA:

Sperry Gyroscope Company, Division of the Sperry-Rand Corporation, Great Neck, Long Island, New York; Contract No. AF 33(600)6565.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 33D5-5-81-1 (Operation and Service Instructions).
TO 33D5-5-81-4 (Illustrated Parts Breakdown).

SHIPPING DATA:

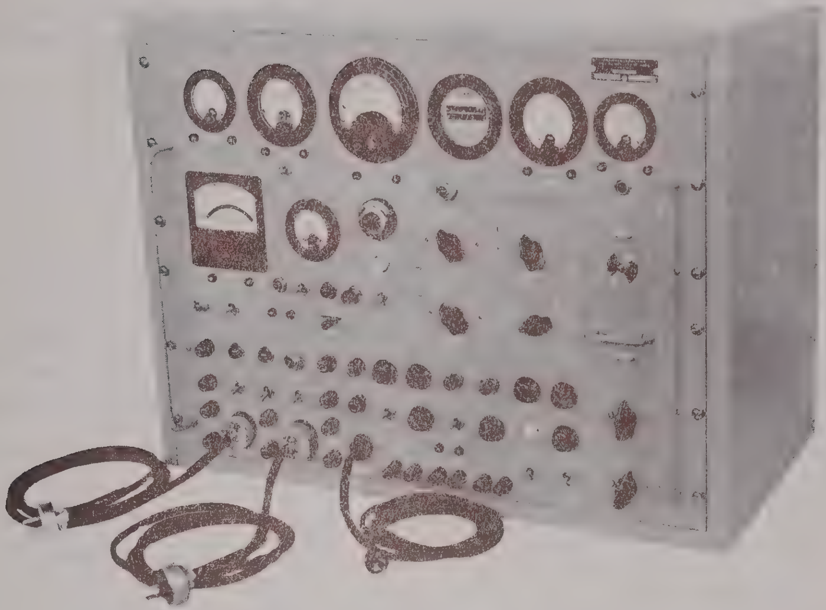
No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

STAND, ROLL STABILIZATION
Part No. T-101439
(Sperry Gyroscope Company)

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Stand, Roll Stabilization (Sperry T-101439)		7CAC-738235	15	42-1/2	23	100

ANALYZER-AMPLIFIER
Part No. 1, 000, 034
(Sperry Gyroscope Company)



FUNCTIONAL DESCRIPTION:

A testing unit which is used at depot-maintenance level to check for conformity to test specifications of the various amplifiers of the type A-4 Gyro Computing Sight (Gun-Bomb-Rocket). The analyzer is also used to check the range motor of the sight head of this sight system. The analyzer provides a means of checking the amplifiers by applying the inputs specified in their respective test specifications and measuring their outputs on precision bridge circuits and meters.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The circuitry of the analyzer includes a +300 volt, DC, regulated supply, a peak-to-peak voltmeter circuit, a lead generator circuit, and the reference voltage and bridge circuit. All operating controls are located on the front panel of the analyzer and three recesses in the top panel provide locations for the units under test. The +300 volt, DC, regulated supply operates from the

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-038195		
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.3	
	- Electronics Test Equipment -Sperry Part No. 1,000,034		

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

ANALYZER-AMPLIFIER
Part No. 1,000,034
(Sperry Gyroscope Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)

external power source, and is controlled by means of a rectifier tube, regulator tubes, transformers, and an amplifier tube to provide a regulated output. For the lead generator circuit, two synchros are driven by an 1800 rpm synchronous motor and geared to provide a 400-cycle per second signal, modulated at 2.5 cycles per second for the elevation channel of the elevation and deflection amplifier, and 15 cycles per second for the deflection channel. In the peak-to-peak voltmeter circuit, two tubes receive the output of the elevation and deflection amplifier and rectify it. The output is then impressed across the resistor-capacitance network and the peak-to-peak voltage is measured on a meter. The reference voltage assembly furnishes an accurate reference of one volt ±0.0001% needed for the calibration of the bridge circuit. The bridge circuit provides an accurate means of measuring small currents from the sensitivity amplifier. Provisions are made in the analyzer chassis for mounting a sighthead range motor for operational testing.

Power Supply: 115 volts, AC, 60 cycles per second, single phase.
28 volts, AC, 400 cycles per second, single phase.
28 volts, DC.
4.5 volts supplied by a type BA-27 Dry Battery.

Frequency Measuring Range: 380 to 420 cycles per second in two-cycle increments.

Voltage Measuring Range:
(4) Voltmeters: (1) 10 to 0 to 10; 100 to 0 to 100; 200 to 0 to 200 volts, DC.
(1) 0 to 500 volts, DC.
(1) 0 to 30 volts, AC.
(1) 0 to 30 volts, DC.

Current Measuring Ranges:
(1) Milliammeter: 0 to 100 milliamperes, DC.
0 to 200 microamperes, DC.
(1) Ammeter: 0 to 300 milliamperes, DC.
(1) Galvanometer: 30 to 0 to 30 volts, DC.

Meter Accuracy: ±2%.

MANUFACTURERS' OR CONTRACTORS' DATA:

Sperry Gyroscope Company, Great Neck, New York; Contract No. AF 33(038) 14794.

TUBE COMPLEMENT:

1 JAN-6SL7-GT, 1 JAN-5R4WGY, 2 JAN-OC3/VR105, 2 JAN-6AS7G, 2 JAN-12AU7, 1 W. E. Type-423A.

REFERENCE DATA AND LITERATURE:

TO 33D5-2-7-1 (Operation and Service Instructions).
TO 33D5-2-7-4 (Parts Catalog).

ANALYZER-AMPLIFIER
Part No. 1, 000, 034
(Sperry Gyroscope Company)

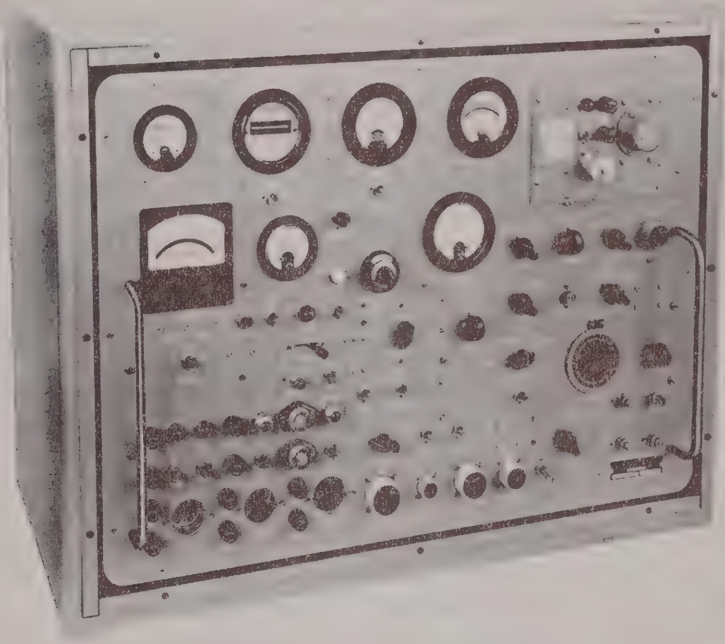
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Analyzer-Amplifier Sperry Part No. 1, 000, 034	Metal	7CAC-038195	21	29	15	130
3	Cable Assembly						

ANALYZER, COMPUTER
Part No. 1,000,036
(Sperry Gyroscope Company)



FUNCTIONAL DESCRIPTION:

An overhaul depot tool which is utilized in the testing and calibration of the computer unit incorporated in the type A-4 Gyro Computing Sight. The analyzer provides a means of applying an accurately measured current to the prediction and stiffness motor assemblies of the computer unit. Also, primary excitation is supplied to the microsyn units and the signal outputs are compared with that of a calibrated secondary standard microsyn mounted within the analyzer.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The analyzer is a cabinet-mounted assembly with all operating controls located on the front panel. Provisions are made for the connections of an oscilloscope and a vacuum tube voltmeter to the analyzer components during the various tests. The analyzer simulates and supplies to the unit under test a series of selected accurate signals. The elevation and deflection amplifier receives the signals from the secondary standard microsyn and from the computer

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-038366		
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.3	
	- Electronics Test Equipment -		Sperry 1,000,036

his project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A

ANALYZER, COMPUTER
Part No. 1,000,036
(Sperry Gyroscope Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)

under test. The difference between the two input signals is amplified and the results are indicated on the DC output meters of the analyzer. Matching or equal input signals results in a zero meter indication. An excitation current is received from the 400-cycle power supply and by the primary of the microsyn unit under test. This is used by the analyzer to check the angular displacement of the stiffness or prediction motor assemblies.

Power Supply: 115 volts, ±10 volts, AC, 60 cycles per second, single-phase;
28 volts, ±3 volts, DC, 400 cycles per second, three-phase;
28 volts, ±1.5 volts, DC.

Meter Ranges: 0 to 30 volts, DC Voltmeter;
0 to 30 volts, AC Voltmeter;
200-0-200 volts, DC Voltmeter;
200-0-100 volts, DC Voltmeter;
10-0-10 volts, DC Voltmeter;
0 to 100 milliamperes, DC Voltameter;
0 to 500 volts, DC Voltameter;
60-0-60 microamperes, DC, Galvanometer;
0 to 300 milliamperes, AC Ammeter
380-420 cycles per second, Frequency Meter.

MANUFACTURERS' OR CONTRACTORS' DATA:

Sperry Gyroscope Company, Division of the Sperry-Rand Corporation, Great Neck, Long Island, New York; Contract No. AF 33(038)14794.

TUBE COMPLEMENT:

1 JAN-6SL7GT, 2 JAN-6AS7G, 2 JAN-OC3/VR105, 1 JAN-5R4WGY, 1 JAN-12AU7, 2 JAN-5687, 1 WE Type 423A.

REFERENCE DATA AND LITERATURE:

TO 33D5-5-38-1 (Operation and Service Instructions).
TO 33D5-5-38-4 (Parts Breakdown).

SHIPPING DATA:

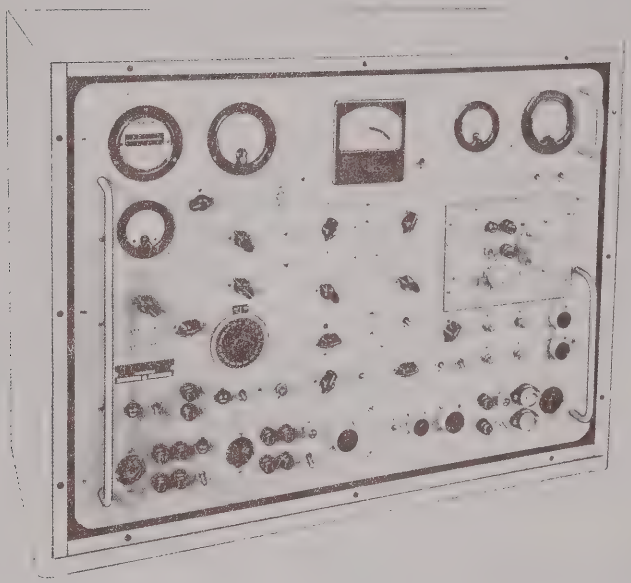
No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

ANALYZER, COMPUTER
Part No. 1,000,036
(Sperry Gyroscope Company)

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Analyzer, Computer (Sperry 1,000,036)	Aluminum	7CAC-038366	24-1/4	32-3/8	15	126
8	Cable Assembly						

ANALYZER, SIGHT HEAD
Part No. 1,000,042
(Sperry Gyroscope Company)



FUNCTIONAL DESCRIPTION:

A portable special purpose overhaul-type test equipment, utilized in the testing and calibration of the sight head unit used in the A-4 Gun Sight System. The analyzer simulates and supplies to the sight head under test a series of selected inputs which are normally supplied to it during operation by the computer and amplifier units of the type A-4 Gun Sight System.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: Electrical components include the elevation, deflection, and range amplifiers, a microsyn drive assembly, and a regulated 300-volt, DC, power supply.

Elevation Amplifier: The elevation amplifier receives an accurate signal from the secondary standard microsyn and a signal from the microsyn under test.

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-043485		
PROCUREM'T INFO.:			
PROCUREM'T COG.:	DESIGN COG.: Commercial		
F.I.I.N.:	FUNCTIONAL CLASS. NO.: 10.3		
- Electronics Test Equipment - Sperry PartNo. 1,000,042			

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

ANALYZER, SIGHT HEAD
Part No. 1, 000, 042
(Sperry Gyroscope Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)

The difference in the two input signals is amplified and the result appears on the output meter.

Deflection Amplifier: The deflection amplifier operates in a manner similar to the elevation amplifier. The input is supplied by either the secondary standard microsyn or the microsyn drive assembly.

Range Amplifier: The range amplifier is part of a servo loop in which a signal from the analyzer and a signal from the range potentiometer in the sight head are fed into the range amplifier. The algebraic difference of these two signals is amplified and the output used to drive the range servo motors in the sight head until this difference assumes a zero level.

Microsyn Drive Assembly. The microsyn drive assembly is used to check the friction level of the sight head torque motors. A motor driven worm gear drives the microsyn at a constant speed. The microsyn output is applied to a tuned circuit which maintains the proper phase between the primary and secondary windings. The output is then fed to either the deflection or elevation amplifier.

+300 Volts, DC, Power Supply: The +300 volts regulated DC power supply consists of a full wave rectifier tube, transformer, and voltage regulator.

Power Supply:

28 ±1.5 volts, DC.
28 ±3 volts, AC, 400 ±4 cycles per second, three-phase.
115 ±10 volts, AC, 60 ±6 cycles per second, single-phase.

Meters:

(1) DC Volts: This meter measures the 28 volts, DC, input to the analyzer circuits. Meter has a full scale deflection of 30 volts and an accuracy of ±2%.

(2) Frequency: This meter monitors the frequency of the 28 volts, 400 cycles per second, three-phase supply to the analyzer circuits. Accuracy is ±2 cycles per second at 400 cycles per second. Range is from 380 to 420 cycles per second.

(3) Output: The meter indicates the DC output of the elevation or the deflection amplifier with meter ranges of 0 to 10, 0 to 100, and 0 to 200 volts.

(4) Volts 400 Cycles per Second: This meter monitors the 28 volts, 400 cycles per second, three-phase supply applied to the analyzer circuits. Accuracy is ±2% at full scale indication.

(5) 500 Volts to 100 Milliamperes: Meter indicates the voltage of the ±300 volts, regulated DC supply or the torque motor coil current. Accuracy is ±1% full scale.

(6) Excite Current: Meter indicates the 400 cycle per second excitation current supplied to the microsyn unit under test. Meter has a full scale deflection of 300 milliamperes and an accuracy of ±2% full scale.

ANALYZER, SIGHT HEAD
Part No. 1, 000, 042
(Sperry Gyroscope Company)

MANUFACTURERS' OR CONTRACTORS' DATA:

Sperry Gyroscope Company, Division of Sperry Corporation, Great Neck, Long Island, New York.

TUBE COMPLEMENT:

2 JAN-OC3, 1 JAN-5R4WGY, 2 JAN-6AS7G, 1 JAN-6SL7GT, 1 JAN-12AT7, 3 JAN-12AU7, 3 JAN-5687, 2 JAN-5763.

REFERENCE DATA AND LITERATURE:

TO 33D5-9-26-1 (Operation and Service Instructions).
TO 33D5-9-26-4 (Illustrated Parts Breakdown).

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Sight Head Analyzer Sperry Part No. 1, 000, 042	Sheet Metal	7CAC-043485	24-1/4	32-3/8	15	130
3	Power Cable Assembly						

ANALYZER, TURN CONTROLLER
Part No. 1, 000, 049
(Sperry Gyroscope Company)

FUNCTIONAL DESCRIPTION:

The turn control analyzer is used for troubleshooting and testing turn controllers either as complete assemblies or as separated major subassemblies or components. Four cable adapters are included to permit connecting to various types of turn controllers. One cable is used at a time depending on the type of turn controller under test. The analyzer performs the following functions: (a) it applies variable calibrated AC and DC voltages to the turn controller; (b) it supplies metering circuits; (c) it supplies dummy loads and impedances; (d) it supplies switching circuits.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The instrument panel mounts all the electrical components of the analyzer. These include an AC voltmeter, a DC voltmeter, three two-position toggle switches, six three-position toggle switches, four selector switches, two variable transformers, and one rheostat. Two connector receptacles on the panel are for receiving the cable adapters. Four pairs of pin jacks are also provided for plugging in external meters.

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-043510		
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.:	10.3
- Electronics Test Equipment -			Sperry 1, 000, 049

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U.S.A

ANALYZER, TURN CONTROLLER
Part No. 1, 000, 049
(Sperry Gyroscope Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)

The AC voltmeter indicates the AC line voltage. The DC voltmeter indicates the DC line voltage. The selector switches channel the desired turn controller circuits into the test circuits, select matching loads, or select matching impedances. The two variable transformers are for varying the output voltages. The variable resistor is connected across the DC input to provide a means of varying the DC voltage to the turn controller under test.

Power Supply: 27.5 ± 0.5 volts, DC, 50 watts.
115 ± 1 volts, AC, 400 ± 5 cycles per second, single-phase, 75 watts.

MANUFACTURERS' OR CONTRACTORS' DATA:

The Sperry Gyroscope Company, Division of Sperry-Rand Corporation, Great Neck, Long Island, New York: Contract No. W33(038)21427.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 33D3-4-28-1 (Operation and Service Instructions).
TO 33D3-4-28-4 (Parts Breakdown).

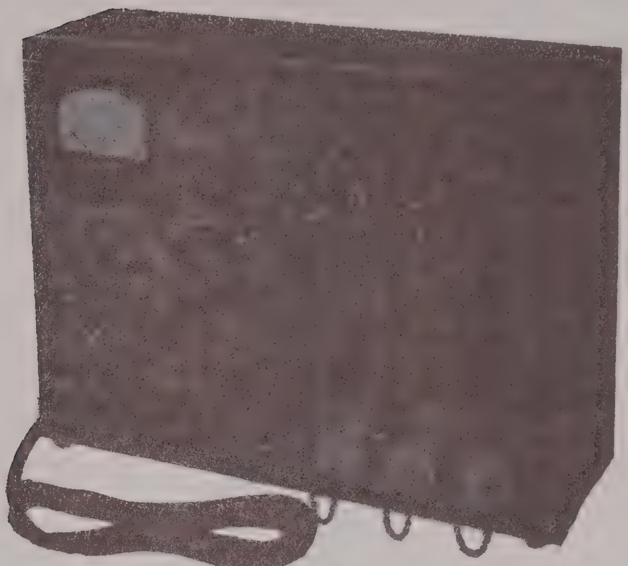
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
1	Analyzer, Turn Controller (Sperry 1000049)	6.9	26	19-1/2	23-1/2	38

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Analyzer, Turn Controller (Sperry 1000049)	Aluminum	7CAC-043510	16	15-1/4	11	35
	Including:						
1	Cable Adapter No. 677889				24±1		
1	Cable Adapter No. 677892				24±1		
1	Cable Adapter No. 677891				24±1		
1	Cable Adapter No. 677890				24±1		

ANALYZER, FLIGHT CONTROLLER
Part No. 1000300
(Sperry Gyroscope Company)



FUNCTIONAL DESCRIPTION:

This is a portable instrument designed to be used for testing various flight controllers and relay boxes.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The analyzer circuit consists of a meter, a variable transformer, selector switches, and toggle switches. Tests are performed with the aid of an external auxiliary vacuum tube voltmeter which is connected to the proper jacks on the panel. The DC voltmeter on the panel permits checking the operation of the components of the test instrument. The panel controls permit the following tests to be performed on the flight controller and relay boxes: (1) The Turn Knob Output Test, (2) The Pitch Knob Control of Relay Test, (3) The Roll Trim Knob Output Test, (4) The Turn Knob Output Unbalance, Null, and Polarity Test, (5) The Pitch Knob Output and Null Test, (6) The Roll Trim Knob Return Test, and (7) The Turn Knob Return Test. Three connectors are mounted on the panel for electrically connecting the analyzer to the equipment under test.

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.			

PROCUREM'T INFO.:
PROCUREM'T COG.: DESIGN COG.: Commercial
F.I.I.N.: FUNCTIONAL CLASS. NO.: 10.3

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U.S.A.

ANALYZER, FLIGHT CONTROLLER
Part No. 1000300
(Sperry Gyroscope Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)

Power Supply: 115 volts, AC, single-phase, 400 cycles per second, 0.5 ampere; 27.5 volts, DC, 3.0 amperes.

MANUFACTURERS' OR CONTRACTORS' DATA:

Sperry Gyroscope Company, Division of Sperry-Rand Corporation, Great Neck, Long Island, New York.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 33D3-4-15-1 (Instructions and Parts Breakdown).

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Analyzer, Flight Controller (Sperry 1000300)			14-1/2	19-1/4	9	40

ANALYZER, ALTITUDE CONTROL ASSEMBLY
Part No. 1000307
(Sperry Gyroscope Company)

FUNCTIONAL DESCRIPTION:

This is a portable, general purpose, depot level instrument designed to test the altitude control assembly and the altitude sensitive units which are parts of the A-14 and MA-2 Autopilot Systems.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The circuit contains a variable transformer which is used to control the AC excitation voltage to the altitude control. A variable resistor is used to control the solenoid voltage and to simulate the altitude control signal. A second variable resistor is used to adjust the solenoid current. Solenoid voltage and solenoid current are indicated on a dual scale DC meter mounted on the panel. An AC voltmeter is also on the panel to indicate the amount of AC excitation to the altitude control. Switches are provided for (a) connecting the AC voltmeter into the test circuit, (b) adjusting the solenoid current and voltage, (c) connecting DC voltage to the altitude engage control, (d) connecting the resistors

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-038179-7		
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.3	
	- Electronics Test Equipment -		Sperry 1000307

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U.S.A.

ANALYZER, ALTITUDE CONTROL ASSEMBLY
Part No. 1000307
(Sperry Gyroscope Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)

in the altitude engage control, (e) connecting the VTVM jacks on the panel to the test circuit and, (f) controlling the AC and DC inputs to the test set. Two AN type connectors are mounted on the panel to permit connecting the power and component cables.

Power Supply: 115 ± 2 volts, AC, 400 ± 5 cycles per second, single-phase, 0.8 ampere; 28 ± 0.5 volts, DC.

AC Voltmeter Range: 0 to 50 volts, AC.

DC Voltmeter Range: 0 to 30 volts, DC.

DC Milliammeter Range: 0 to 50 milliamperes, DC.

MANUFACTURERS' OR CONTRACTORS' DATA:

Sperry Gyroscope Company, Division of the Sperry-Rand Corporation, Great Neck, Long Island, New York; Contract AF 33(038)21096.

TUBE COMPLEMENT:

1 JAN-6L6.

REFERENCE DATA AND LITERATURE:

TO 33D3-4-17-1 (Instructions and Parts Breakdown).

SHIPPING DATA:

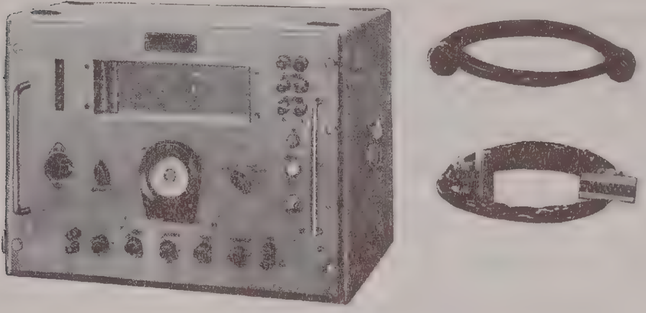
No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

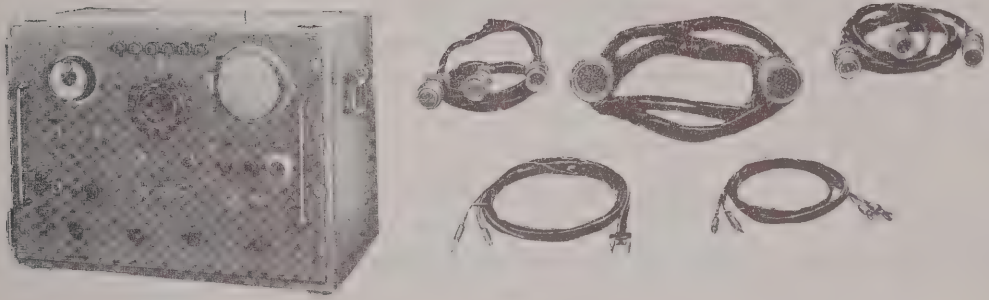
ANALYZER, ALTITUDE CONTROL ASSEMBLY
Part No. 1000307
(Sperry Gyroscope Company)

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Analyzer, Altitude Control Assembly (Sperry 1000307)		7CAC-038179-7	9	12	6-1/2	17
	Including:						
1	Cable (Sperry 610918)						
1	Cable (Sperry 610926)						
1	Cable (Sperry 610927)						
1	Cable (Sperry 610928)						
1	Cable (Sperry 611723)						

ELECTRICAL POWER TEST SET AN/GSM-2





FUNCTIONAL DESCRIPTION:

A portable, special purpose, depot test set used to provide a thorough operational test for Power Supply Unit PP-185/APA-44 and its subunits. It provides the following operation and test facilities: (a) a thermostatically controlled electric heater circuit, complete with indicator lamp, for temperature control with the unit in the "STANDBY" condition; (b) a Variac for control of the 400 cycles per second, voltage supplied to the unit under test; (c) a feed-through circuit for measurement balance, and other tests on the 350 cycles per second oscillator of the power unit under test; (d) automatic loading of the 350 cycles per second oscillator when the harmonic and frequency meter is disconnected; (e) a rheostat for control of the 26-volt DC voltage furnished to the power supply unit under test; (f) high, medium, and low loads for the regulators under test in order to perform regulation checks; (g) switching and voltage dividers for checking the power supply unit meter and its multipliers; (h) a bridge circuit and associated switching for checking the thermistors in the thermostated can (part of the 350 cycles per second oscillator); (i) circuits for checking

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.	Alternate Standard		
STOCK NOS.	7CAC-801318-5655		

PROCUREM'T INFO.: USAF Spec. 71-5056-A

PROCUREM'T COG.: USAF DESIGN COG.: USAF, Arm.

FUNCTIONAL CLASS. NO.: 10.3.1

F.I.I.N.:

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

ELECTRICAL POWER TEST SET AN/GSM-2

FUNCTIONAL DESCRIPTION: (Continued)
the resistors in the feedback networks of the 350 cycles per second oscillator (in conjunction with the megohm bridge); (j) means of switching and measuring the voltage outputs of the (D-153234) rectifier; (k) means of measuring and switching the voltage outputs of the power supply regulator units; (l) means of checking the output potentiometer range of the regulators; (m) means of measuring the rectifier filament voltages; (n) circuits for checking the ability of the regulators to track the 350 cycles per second voltage variations.

RELATIONSHIP TO OTHER EQUIPMENT:
Similar to Western Electric Company GS-15327.

ELECTROMECHANICAL DESCRIPTION:
Power Supply: 115 volts, AC, 60 cycles per second, single phase, 2 amperes.
115 volts, AC, 400 cycles per second, single phase, 5 amperes.
28 volts, DC, 2 amperes.
Power Output: 0 to 28 volts, DC, variable.
0 to 135 volts, AC, 400 cycles per second, variable.
Temperature Limits: 0°C. to +45°C., operational; -65°C. to +85°C., storage.
Relative Humidity: Up to 95%, operational and storage.
Altitude Range: Up to 10,000 feet, operational; up to 50,000 feet, storage.

MANUFACTURERS' OR CONTRACTORS' DATA:
Western Electric Company, 120 Broadway, New York, New York; USAF Contract No. AF 33(038)7414; Drawing Index BB-745281.

TUBE COMPLEMENT:
1 JAN-5651, 1 JAN-6X5, 1 JAN-6SN7, 1 JAN-6SU7, 1 JAN-6AL5.

REFERENCE DATA AND LITERATURE:
33D7-6-3-1 (Operation and Maintenance Instructions).
Bell Laboratories Operating Instructions BA-720169.

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Over-all Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

ELECTRICAL POWER TEST SET AN/GSM-2

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Over-all Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Electrical Power Test Set AN/GSM-2 (GS-15327)	Steel	7CAC-801318-5655				
	Including:						
1	Power Unit Test Set GS-15038			14-7/8	19-7/8	17-7/8	90
1	Regulator Tracking Test Set GS-15305			14-7/8	19-7/8	17-7/8	90
2	Test Cable BL-711567			48 long			
1	Test Cable BO-711568						
1	Test Cable BO-711587			36 long			
1	Power Cable BR-717325			75 long			
1	Power Cable BR-717326			63 long			
1	Test Cable BO-717905			48 long			
1	Test Cable BO-711565			18 long			
1	Power Cable BR-711572						

TEST SET, INDICATOR, POWER SUPPLY
Part No. 210740
(Cal-Tronics Corporation)

FUNCTIONAL DESCRIPTION:

A transportable special purpose test set used to provide a complete functional test of the Indicator Power Supply, North American 14136-506. The indicator power supply is a component of the MG-4 Fire Control System. Test results are indicated on two null indicating microammeters.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The test set circuitry consists of two null indicating circuits and two regulated power supplies. The output of the low voltage power supply is cabled to the unit under test. The output of the high voltage power supply is fed through a series of load resistors, tapped at various points to supply specific voltages. Each of the tapped voltages is fed in turn to one side of a null indicating circuit. Input voltages (indicator output voltages of the unit under test) are fed simultaneously to the other side of the null indicator circuit. A null reading indicates that the power supply under test is operating satisfactorily. Other high voltage outputs from the unit under test are measured by a vacuum tube voltmeter included with the test set.

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.			
PROCUREM'T INFO.:		DESIGN COG.: Commercial	
PROCUREM'T COG.:		FUNCTIONAL CLASS. NO.: 10.3.1	
F.I.I.N.:			Cal-Tronics 210740
	- Electronics Test Equipment -		

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

TEST SET, INDICATOR, POWER SUPPLY
Part No. 210740
(Cal-Tronics Corporation)

ELECTROMECHANICAL DESCRIPTION: (Continued)

Power Supply: 115 volts, AC, 400 cycles per second, single-phase, 1.5 amperes. 115 volts, AC, 60 cycles per second, single-phase, 1.0 ampere.

Microammeter Calibration: 0 to ± 12.5 microamps.

MANUFACTURERS' OR CONTRACTORS' DATA:

Cal-Tronics Corporation, 11307 Hindry Avenue, Los Angeles 45, California; Contract AF 33(600)26479; Approximate Cost per Unit, $6,000.

TUBE COMPLEMENT:

1 JAN-5Y3, 1 JAN-6AU6, 1 JAN-2X2.

REFERENCE DATA AND LITERATURE:

Instruction and Operating Manual, Indicator Power Supply Test Set, Cal-Tronics 210740.

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Test Set, Indicator, Power Supply, Cal-Tronics 210740			67	37	44	
	Including:						
1	Test Panel, Cal-Tronics 10801						
1	Power Panel Cal-Tronics 310734						
1	VTVM Hewlett-Packard 410B						
1	Cable						

TEST SET, POWER SUPPLY
Part No: 13824-1-A
(Eclipse-Pioneer Division of Bendix Aviation Corporation)

FUNCTIONAL DESCRIPTION:

A portable, special purpose equipment designed to provide a means for testing Power Supply GC4-A1. The equipment is used to test phase displacement, output voltage fluxgate excitation currents, and filter sensitivity. Results are indicated by means of a voltmeter, a DC milliammeter and an oscilloscope.

RELATIONSHIP TO OTHER EQUIPMENT:

The test set is used in conjunction with a 10,000 ohms-per-volt DC voltmeter, an audio signal generator, a vacuum-tube voltmeter and an oscilloscope.

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The test set consists essentially of switching circuits to select proper test circuits and conditions for individual tests, a voltmeter to monitor each phase of the input power, a milliammeter to measure the DC bias fluxgate current in the power supply and a variable filter-phase network

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.		Standard	
STOCK NOS.			

PROCUREM'T INFO.:

PROCUREM'T COG.: Navy — DESIGN COG.: Commercial

F.I.I.N.: — FUNCTIONAL CLASS. NO.: 10.3.1

TEST SET, POWER SUPPLY
Part No. 13824-1-A
(Eclipse-Pioneer Division of Bendix Aviation Corporation)

ELECTROMECHANICAL DESCRIPTION: (Continued)

used to vary the lagging phase of voltage applied to horizontal binding posts of an auxiliary oscilloscope during phase displacement tests.

Power Supply: 115 volts, AC, 400 cycles per second.
Filter-Phase Signal Shift Range: 55 to 65 degrees.
Voltmeter Range (3-Phase Input): 0 to 150 volts, AC.
Milliammeter (DC Bias Range): 0 to 50 milliamps.

MANUFACTURERS' OR CONTRACTORS' DATA:

Eclipse-Pioneer Division, Bendix Aviation Corporation, 43 Williams Avenue, Teterboro, New Jersey.

TUBE COMPLEMENT:

REFERENCE DATA AND LITERATURE:

1-13824 (T & TE Publications).

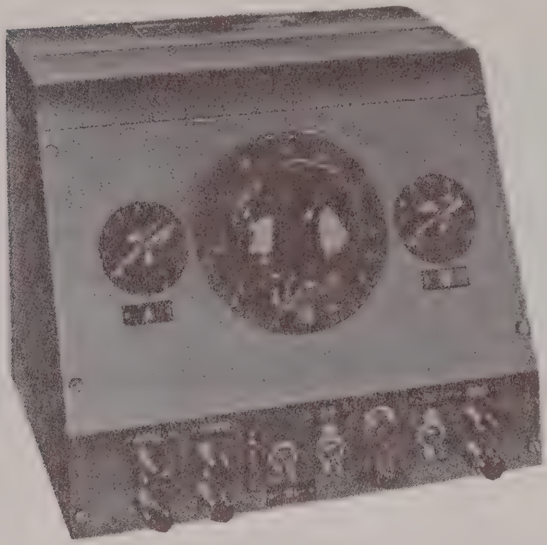
EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Test Set, Power Supply Eclipse-Pioneer 13824-1-A	aluminum		22	19-1/2	14-1/6	38
1	Cable QB78659-1						
4	Cable QB71520-1						

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
	Test Set, Power Supply Eclipse-Pioneer 13824-1-A					

TESTER, POWER SUPPLY
Part No. NSA-2
(Ford Instrument Company)



FUNCTIONAL DESCRIPTION:

This is a portable instrument designed to test the plug-in power supply for Amplifier, Electronic Control AM-916/ASN-6, which is part of Computer Set, Latitude and Longitude AN/ASN-6.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The tester instrument panel contains a variable transformer which permits the tester input voltage to be adjusted. External posts on the panel permit an external auxiliary audio oscillator, VTVM, or analyzer to be connected to the tester. Switches are provided to permit the selection of the power circuit to be measured. Provision is made for the connection of an isolation transformer in the line power supply to minimize the danger of electrical shock.

The tester permits the selection for measurement of various output voltages of the power supply plug-in unit. It also permits checking the DC plate supply to determine if it is operating below its maximum allowable impedance.

Power Supply: 115 volts, AC, 400 cycles per second, single-phase.

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-806552-3		
PROCUREM'T INFO.:		DESIGN COG.: Commercial	
PROCUREM'T COG.:		FUNCTIONAL CLASS. NO.: 10.3.1	
F.I.I.N.:			Ford Inst. NSA-2
	- Electronics Test Equipment -		

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

TESTER, POWER SUPPLY
Part No. NSA-2
(Ford Instrument Company)

MANUFACTURERS' OR CONTRACTORS' DATA:

Ford Instrument Company, Division of the Sperry-Rand Corporation, 31-10 Thomson Avenue, Long Island City, New York; Contracts AF33(600)18882 and AF33(600)-26828.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 33D2-8-18-31 (Operation, Service and Repair Instructions).

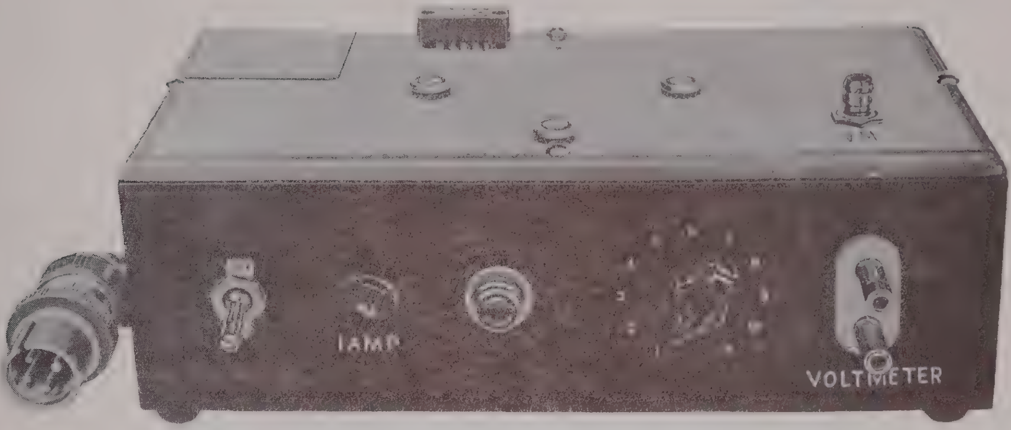
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Tester, Power Supply (Ford Inst. NSA-2)		7CAC-806552-3	8	10	8	13-1/2

TESTER, POWER SUPPLY
Part No. TE 5728
(Kollsman Instrument Corporation)



FUNCTIONAL DESCRIPTION:

This tester is used to test the power supply unit of the C-2 True Airspeed and Mach Number Computer.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The tester circuit includes a single-pole, eleven-position switch which permits selection of the desired test function and connects the test circuit to a panel-mounted voltmeter jack. A normally open push-button switch is connected in series with one of the meter jacks and must be depressed to connect the external voltmeter into the circuit. A toggle switch is used for turning the test set on or off. An induction motor of the type used in the C-2 computer is incorporated in one of the tester circuits. The purpose of this is to test the power supply unit under operating conditions similar to those in the computer. A receptacle is mounted on the top of the tester cabinet for receiving the power supply unit connector. Power for the tester and power supply unit is obtained through a cable and an AN type connector.

Power Supply: 115 volts, 400 cycles per second, AC, single-phase.

MANUFACTURERS' OR CONTRACTORS' DATA:

Kollsman Instrument Corporation, 80-08 45th Avenue, Elmhurst 73, New York; Contract No. AF 33(600)27206, 20 May 1954; Approximate Cost per Unit, $ 235.00.

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.			

PROCUREM'T INFO.:
PROCUREM'T COG.: DESIGN COG.: Commercial
F.I.I.N.: FUNCTIONAL CLASS. NO.: 10. 3. 1

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in

TESTER, POWER SUPPLY
Part No. TE 5728
(Kollsman Instrument Corporation)

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 5F5-3-5-3 (Overall Instructions).

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
1	Tester, Power Supply (Kollsman TE 5728)	0.9	10	13	12	8

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Tester, Power Supply (Kollsman TE 5728)			4-3/8	10-1/4	8	3-1/2

ANALYZER, HIGH VOLTAGE SUPPLY
(HIGH VOLTAGE TEST ANALYZER)
Part No. T-101144
(Sperry Gyroscope Company)

FUNCTIONAL DESCRIPTION:

A portable analyzer used to check the voltage output of high voltage power supplies under simulated load conditions.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The analyzer circuit consists of resistors, meters for monitoring the input line voltage and primary current flow, and a variable transformer which regulates the AC input line voltage. A socket receptacle is used for connecting the high voltage power supply to the analyzer. Switches, controls, and output jacks are located on the front panel of the unit. Testing is accomplished by connecting an auxiliary electrostatic voltmeter between the desired output jacks. This circuitry imposes a load condition which allows the operational quality of the power supply under test to be determined.

Power Supply: 115 volts, AC, 400 cycles per second, single phase.

Output Voltage: 0 to ±2050 volts, DC.

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-040015		

PROCUREM'T INFO.:

PROCUREM'T COG.: DESIGN COG.: Commercial

F.I.I.N.: FUNCTIONAL CLASS. NO.: 10.3.1

- Electronics Test Equipment -Sperry Part No. T-101144

his project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

ANALYZER, HIGH VOLTAGE SUPPLY
(HIGH VOLTAGE TEST ANALYZER)
Part No. T-101144
(Sperry Gyroscope Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)
Accuracy: AC Amperes Input Meter: ±2%.
AC Volts Input Meter: ±2%.

MANUFACTURERS' OR CONTRACTORS' DATA:

Sperry Gyroscope Company, Great Neck, Long Island, New York; Contract No. AF 33(600)6565.

REFERENCE DATA AND LITERATURE:

TO 33D5-3-8-1 (Handbook of Operation and Service Instructions).
TO 33D5-3-8-4 (Illustrated Parts Breakdown).

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
1	Analyzer, High Voltage Supply Sperry Part No. T-101144	6.25	20	27	20	50

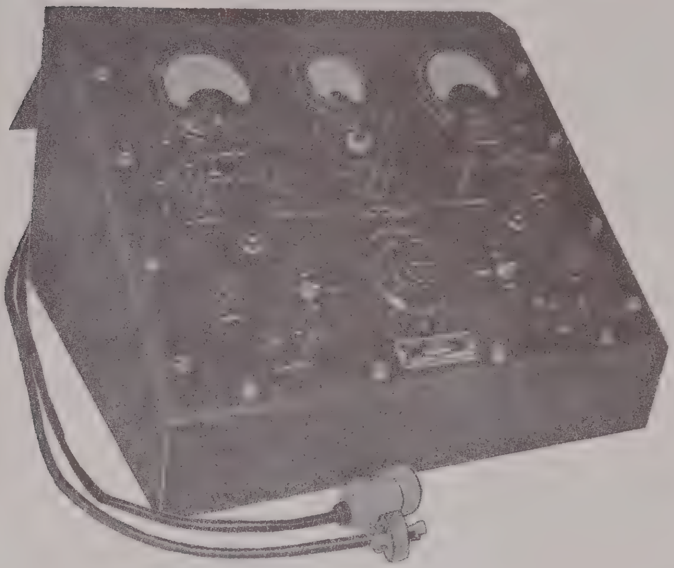
EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Analyzer, High Voltage Supply Sperry Part No. T-101144		7CAC-040015	12-1/2	20-5/8	13	20

ANALYZER-POWER SUPPLY

Part No. T-101145

(Sperry Gyroscope Company)



FUNCTIONAL DESCRIPTION:

A portable analyzer used to check the voltage output of power supply units under simulated load conditions.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The analyzer circuit consists of resistors, meters for monitoring the input line voltage and primary current flow, and a variable transformer which regulates the AC input line voltage. An adapter cable is used for connecting the high voltage power supply to the analyzer. All switches, controls, meters, and jacks are located on the inclined front panel of the unit. Testing is accomplished by connecting meters into the desired circuits by rotating the various switches. An oscilloscope may be used by connecting to the "Scope" jacks of the analyzer and rotating the "Scope" switch to the desired position. A dummy load may be applied to the power supply under test by rotating the load selector switch. Results of tests are read on the various meters.

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-040360		
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.3.1	
	- Electronics Test Equipment - Sperry Pt. No. T-101145		

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

ANALYZER-POWER SUPPLY
Part No. T-101145
(Sperry Gyroscope Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)

Power Supply: 115 volts, AC, 400 cycles per second, single-phase.
Voltage Range: 0 to 150 volts, AC, 0 to 500 volts, DC.
Current Range: 0 to 300 milliamperes.
Accuracy: AC Input Voltmeter: 0.5%.
DC Milliammeter: 0.5%.
DC Output Voltmeter: 0.25%.

MANUFACTURERS' OR CONTRACTORS' DATA:

Sperry Gyroscope Company, Great Neck, Long Island, New York.

TUBE COMPLEMENT:

REFERENCE DATA AND LITERATURE:

TO 33D5-14-4-1 (Operation and Service Instructions).
TO 33D5-14-4-4 (Illustrated Parts Breakdown).

SHIPPING DATA:

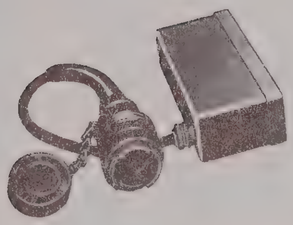
No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Power Supply Analyzer (Sperry Part No. T-101145)	Steel	7CAC-040360	11-1/4	15-1/2	20	30

Sperry Pt. No. T-101145- Electronics Test Equipment -

TEST SET, TELEPHONE TS-712/TCC-11



FUNCTIONAL DESCRIPTION:

A portable, general purpose, battery-operated instrument used in testing telephone repeaters and cables.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Power Supply: 1.5, 90 volts DC.
Transmission Frequency Range: 1 to 1.6 kilocycles per second; 68 kilocycles per second.
Direct Voltage: 150 volts.
Ringing Signal: 1600 cycles per second.
Sensitivity: 100 microamps (full-scale deflection).
Temperature Range: -65°F to +150°F.

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			Standard
STOCK NOS.			3F4325-712

PROCUREM'T INFO.:
PROCUREM'T COG.: Army DESIGN COG.: Army
FUNCTIONAL CLASS. NO.: 10.3.2
F.I.I.N.:

- Electronics Test Equipment - TS-712/TCC-11

TEST SET, TELEPHONE TS-712/TCC-11

MANUFACTURERS' OR CONTRACTORS' DATA:

TUBE COMPLEMENT:

2 1U5, 1 2N21.

REFERENCE DATA AND LITERATURE:

TM 11-2143

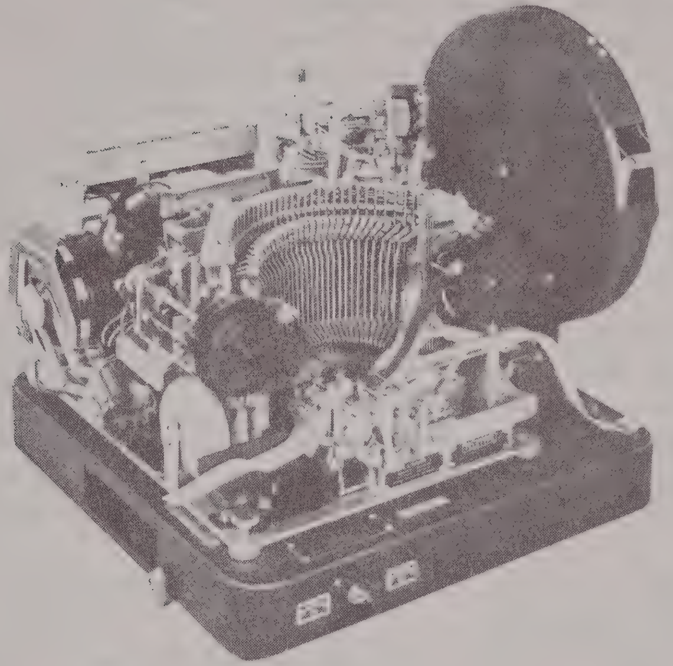
EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Test Set, Telephone TS-712/TCC-11 Including:		3F4325-712	13-3/8	9-7/8	7-1/2	19
1	Telephone EE-8		4B5008	7-2/3	3-1/2	9-/9-16	9.75
2	Technical Manual TM 11-2143						
1	Artificial Cable		2Z3904-17	7-1/2	2	3-1/3	5

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
1	Test Set, Telephone TS-712/TCC-11	3.3	15	14	27	72

MONITORING PRINTER
MODEL NO. 14
(Teletype Corporation)



FUNCTIONAL DESCRIPTION:

A general purpose, portable, typing reperforator used in fixed-plant installations of teletypewriters to monitor their messages. This unit is a receiving type only and does not contain a keyboard. Messages are recorded on paper tape in coded chadless perforations and standard type, simultaneously. Therefore, the messages can be read directly from the tape, or retransmitted by a relay station using the perforated code. The unit is obtainable in three types: high base, low base, or no base, depending on the teletypewriter equipment it is used with. (Type FPR23 uses a high base (FPRB4), Type FPR21 uses a low base (FB43), and Type FPR5 does not use a base.) As test equipment this unit indicates qualitatively the accuracy with which the teletypewriter sends or receives messages. The unit contains connections for power and signal input, and a switch to turn its drive motor on or off. A window in its cover shows part of the interior. The paper tape is wound on a spool at the right-hand side of the unit. The coded and typed tape emerges from the lower left-front of the unit at the left of the motor switch.

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.			

PROCUREM'T INFO.:

PROCUREM'T COG.: DESIGN COG.: Commercial

F.I.I.N.: FUNCTIONAL CLASS. NO.: 10.3.3

- Electronics Test Equipment - Teletype 14

his project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

MONITORING PRINTER
MODEL NO. 14
(Teletype Corporation)

RELATIONSHIP TO OTHER EQUIPMENT:

Type FPR5 is used with Teletypewriter Set AN/TGC-1 to receive and record messages at high speed or monitor message transmission. Type FPR21 is used with Teletypewriter Sets 131, 132, and 133 and with radio teletype circuits, to receive and record messages at high speed for retransmission. Type FPR23 is used with Teletypewriters TT-7/FG and TT-8/FG and other Model 19 teletypewriter sets as a monitor. It records all messages transmitted or received either for record purposes or for retransmission. This type can also be used to receive urgent messages on one circuit when the associated teletypewriter equipment is operating on another circuit or is otherwise unavailable.

ELECTROMECHANICAL DESCRIPTION:

Power Supply: 115 volts, DC, or unregulated 115 volts, AC, 25 to 60 cycles per second, single phase, for governed series motor, or regulated 115 volts, AC, 60 cycles per second, single phase, for synchronous motor. (Either type motor may be supplied.) This power is normally obtained from the teletypewriter equipment it is used with, but may be supplied from a separate source.

Motor Speeds:
Series: 1800 rpm, 2102 rpm, or 2308 rpm (by adjustment of governor).
Synchronous: 1800 rpm only.

Operating Speeds: 368 operations per minute (any one of the motor speeds).
404 operations per minute (with proper adjustment using 2102 or 2308 rpm motor speed for use with British equipment).
600 operations per minute (with major modification for special fixed plant operation only, using the series motor only).

Typing Speeds: Approximately 60 words per minute (368 operations per minute).
Approximately 66 words per minute (404 operations per minute).
Approximately 100 words per minute (600 operations per minute).

MANUFACTURERS' OR CONTRACTORS' DATA:

Teletype Corporation, Chicago, Illinois.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TM 11-2223 (TO 16-45-145) (Typing and Non-typing Reperforators, Teletype Model 14).

MONITORING PRINTER
MODEL NO. 14
(Teletype Corporation)

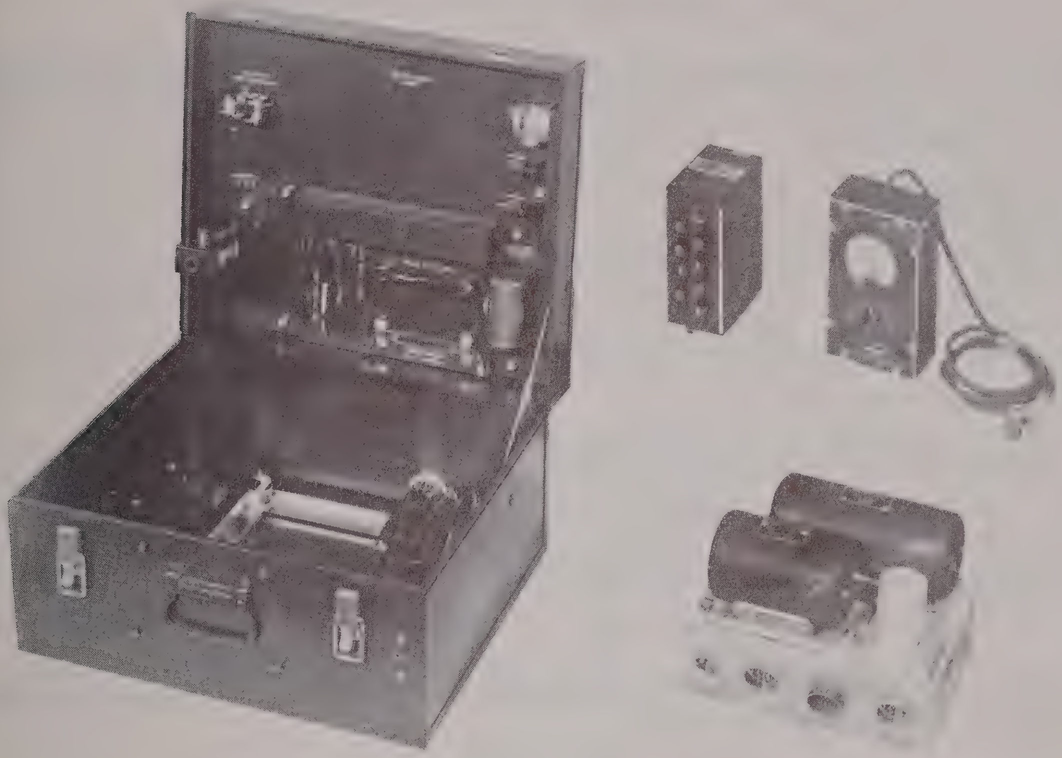
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
1	Typing Reperforator FPR5 (Export Packed)	5.5	24-3/4	20-3/4	16-3/4	86
1	Typing Reperforator FPR21 (Export Packed)	5.5	24-3/4	20-3/4	16-3/4	86
1	Base FB43 (Export Packed)	4.2	25-7/8	20-7/8	14-1/2	49
1	Cover C-166 (Export Packed)	6.7	22	20-3/4	20-1/4	18
1	Typing Reperforator FPR23 (Export Packed)	5.5	24-3/4	20-3/4	16-3/4	86
1	Base FPRB4 (Export Packed)	4.0	25-3/4	20-3/8	13-1/2	50
1	Cover C-168 (Export Packed)	6.7	22	20-3/4	20-1/2	5.2

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Typing Reperforator FPR5 Model 14 or	Metal	4TFPR5H	13	12	8-1/2	34.25
1	Typing Reperforator FPR21 Model 14 or	Metal	4TFPR21GB226	13-1/2	16-3/4	11-1/2	62.25
1	Typing Reperforator FPR23 Model 14	Metal	4TFPR23GB226	13-1/2	16-3/4	11-1/2	62.25

RADIO TEST SET AN/ARM-1
(TEST SET, RADIO, AN/ARM-1)



FUNCTIONAL DESCRIPTION:

This general purpose test set is designed for use in the alignment, testing and maintenance of radio and radar sets. It is not designed for operation during flight, but it may be transported by air or ground vehicles. The test unit is designed to check A and B voltages, and grid and plate currents.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The power junction box provides a high voltage supply for the equipment being tested. The two dynamotor units generate the power needed in the testing. Both dynamotors operate from a primary voltage source of 28 volts. The Test Unit Meter (TS-178/ARM-1) has a D'Arsonval type movement. Various shunt and multiplier resistors are connected to the meter by the selector switch on the panel of the test unit.

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.	Standard		3F4037-1
STOCK NOS.	7CAC-801319-2542		

PROCUREM'T INFO.: Signal Corps Spec. No. 271-5053
PROCUREM'T COG.: USAF DESIGN COG.: USAF, C&N
FUNCTIONAL CLASS. NO.: 10. 3.4
F.I.I.N.: AN/ARM-1

- Electronics Test Equipment -

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

RADIO TEST SET AN/ARM-1
(TEST SET, RADIO, AN/ARM-1)

ELECTROMECHANICAL DESCRIPTION: (Continued)

Power Supply: 28 volts DC.

Frequency Range: Will test equipment in the range 100 to 156 megacycles per second.

Dynamotor Unit DY-21/ARC-3:
- Input Voltage: 28 volts DC.
- Full Load Input Current: 7 amperes.
- No Load Input Current: 1 ampere.
- Full Load Intermittent Output Voltage: 410 volts DC.
- Intermittent Current (30 seconds on, 30 seconds off): 325 milliamperes.
- No Load Output Voltage: 450 volts DC.

Dynamotor Unit DY-22/ARC-3:
- Input Voltage: 28 volts DC.
- Full Load Input Current: 1.8 amperes.
- No Load Input Current: 0.8 ampere.
- Full Load Continuous Output Voltage: 210 volts DC.
- Continuous Current Drain: 125 milliamperes.
- No Load Output Voltage: 230 volts DC.

Test Unit Meter Range: 0 to 50 microamperes (without shunt or multiplier resistors).

Accuracy: Input voltage must be accurate to ±1/2 volt to insure accurate operation. Test Unit Meter is accurate to ±2%.

MANUFACTURERS' OR CONTRACTORS' DATA:

Taffet Radio and Television Company, 2530 Belmont Avenue, Bronx 58, New York; Contract No. AF 33(604)-9358, (1954).

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 16-30ARM1-2 (Maintenance Instructions).
TO 16-55-150 (Spare Parts List).

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Over-all Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
1	Radio Test Set AN/ARM-1 with accessories (Shelf Package - Water Resistant Carton)	3.39	22	19	14	63.0

RADIO TEST SET AN/ARM-1
(TEST SET, RADIO, AN/ARM-1)

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Over-all Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Test Set AN/ARM-1 Including:		7CAC-801319-2542 3F4037-1	17-1/2	15-1/4	9-7/16	
1	Power Junction Box J-68/ARC-3		3300-347541000 3H2676-68	10-11/32	8-3/8	5-3/16	6.700
1	Dynamotor Unit DY-21/ARC-3		1600-337837500 3H1535-21	7-1/2	3-7/16	4	8.400
1	Dynamotor Unit DY-22/ARC-3		1600-337837590 3H1535-22	6-17/32	3-7/16	4	4.800
1	Mounting Base MT-236/ARC-3		1600-293346339 2Z6763-236	10-13/16	8-7/8	11/16	0.750
1	Control Box C-118/ARC-3		1600-211939981 2C684-118	5-7/8	2-5/8	6-1/8	1.750
1	Mounting FT-240-A		1600-293080000 2Z6721-240A	6-3/8	5-1/2	5/16	0.210
1	Chest CY-146/ARM-1		7CAC-176572-38 3F2623-146	17-1/2	15-1/4	9-7/16	26.000
1	Test Unit TS-178/ARM-1		7CAC-587930 3F4325-178	4-1/8	3-1/8	7-1/16	2.800
2	Adapter PL-272		8850-106506 2Z7226-272	1-7/8 [illegible]	.992 dia.		0.115
1	Adapter MX-293/ARM-1		3300-286050065 2Z301-293	1-5/16	1-3/16	21/64	0.083
1	Shorting Plug U-30/ARM-1		8850-466700 2Z7250-30	1-1/4	1-5/16 dia.		0.035

(Continued)

RADIO TEST SET AN/ARM-1
(TEST SET, RADIO, AN/ARM-1)

EQUIPMENT SUPPLIED: (Continued)

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Over-all Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Shunting Unit MX-294/ARM-1		1690-328824153 3F3989-294	1-1/16	1-3/8	.180	0.030
1	Alignment Tool MX-174/ARM-1		6Q340-174	6-11/16	1-1/16 dia.		0.122
1	Tuning Wand MX-173/ARM-1		1690-327305730 3F3989-173	6	1-3/16	13/64	0.030
1	Set of Relay Maintenance Tools F/AN/ARM-1		6R37952				0.110
1	Cord CX-214/ARM-1		7CAC-170270-1382 3E6000-214	12 long			0.500
1	Cord CX-215/ARM-1		7CAC-170270-1369 3E6000-215	60 long			0.750
1	Cord CX-216A/ARM-1		7CAC-170270-1372 3E6000-216	60 long			0.800
1	Cord CX-217/ARM-1		7CCI-56295-1 3E6000-217	10 long			0.500
1	Crystal Unit CR-1A/AR (5555.555 kc)		2100-2x4 (Freq.)	1-1/8	1-3/16	7/16	0.070
1	Crystal Unit CR-1A/AR (6944.444 kc)		2100-2x4 (Freq.)	1-1/8	1-3/16	7/16	0.070
1	Crystal Unit CR-1A/AR (8000.00 kc)		2100-2x4 (Freq.)	1-1/8	1-3/16	7/16	0.070
1	Crystal Unit CR-1A/AR (8100.00 kc)		2100-2x4 (Freq.)	1-1/8	1-3/16	7/16	0.070

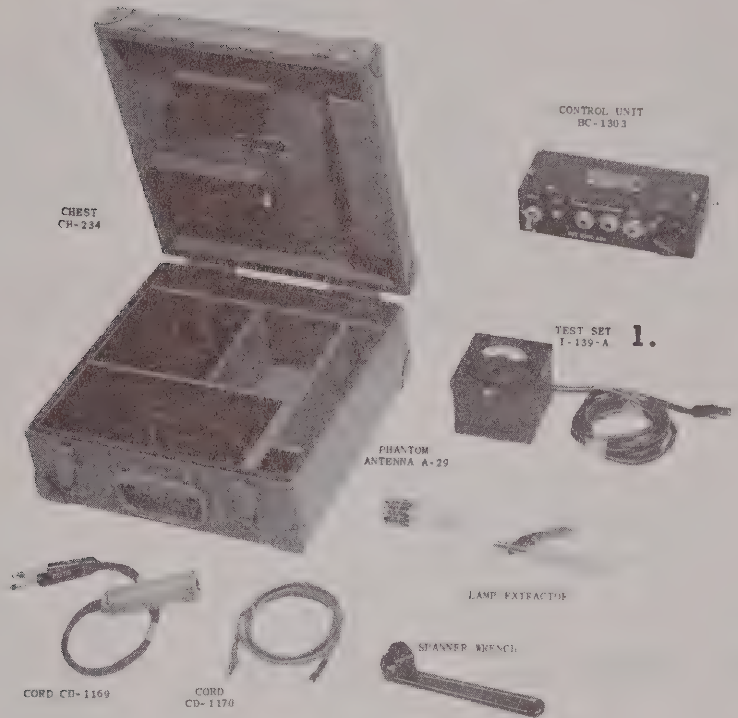
(Continued)

RADIO TEST SET AN/ARM-1
(TEST SET, RADIO, AN/ARM-1)

EQUIPMENT SUPPLIED: (Continued)

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Over-all Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Crystal Unit CR-1A/AR (8458.823 kc)		2100-2x4 (Freq.)	1-1/8	1-3/16	7/16	0.070
1	Crystal Unit CR-1A/AR (8727.000 kc)		2100-2x4 (Freq.)	1-1/8	1-3/16	7/16	0.070
2	Cap MX-506/ARM-1		3300-387281250 2Z935-506	1-1/2	13/16		0.020
2	Spare Fuse Kit						

TEST EQUIPMENT IE-36
(TEST SET, RADIO, IE-36)



1. Required but not supplied.

FUNCTIONAL DESCRIPTION:

A small, portable, special purpose test set used to troubleshoot Radio Sets SCR-522-A and SCR-542-A. It reproduces operating functions of the control boxes and jack boxes of SCR-522-A and 542-A by providing headphone and microphone connections, thereby eliminating control boxes and jack boxes as necessary for troubleshooting. It may be used to test starting and stopping mechanism, functioning of the channel-selection circuits, receiver-transmitter-remote switching functions, and contractor operation in the transmitter section. It may also be used for rough receiver-sensitivity and relative modulation checks.

RELATIONSHIP TO OTHER EQUIPMENT:

Equipment required but not supplied: One Test Set I-129-A, one Microphone (carbon) T-17, one Microphone (magnetic) T-44 and one Headset.

	AIR FORCE	NAVY	ARMY
TYPE CLASS.	Standard		
STOCK NOS.	7CAC-801319-267	ASO-R16-T-1826-22	3F3933-36
PROCUREM'T INFO.:			
PROCUREM'T COG.: USAF		DESIGN COG.: USAF, C&N	
F.I.N.:		FUNCTIONAL CLASS. NO.: 10.3.4	
- Electronics Test Equipment -			IE-36

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

TEST EQUIPMENT IE-36
(TEST SET, RADIO, IE-36)

ELECTROMECHANICAL DESCRIPTION:

Power Supply: Obtained from Radio Set under test.
Output: Radio frequency noise generator (buzzer type).
Phantom Antenna Power Range: 6 to 10 watts.

MANUFACTURERS' OR CONTRACTORS' DATA:

Argus, Inc., 405 South Fourth Street, Ann Arbor, Michigan; Order No. 408-DAY-44, 21 July 1944; Approximate Cost per Unit, $34.00; Order No. 917-DAY-44, 11 October 1944; Approximate Cost per Unit, $32.00; Order No. 1029-DAY-44, 20 July 1944; Approximate Cost per Unit, $32.00.

The Rauland Corporation, 4245 North Knox Avenue, Chicago 41, Illinois; Order No. 409-DAY-44, 24 November 1943; Approximate Cost per Unit, $40.00.

TUBE COMPLEMENT:

Not applicable.

REFERENCE DATA AND LITERATURE:

TO 33A1-13-16-2 (Maintenance Instructions).
TO 33A1-13-16-4 (Spare Parts List).

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
1	Test Equipment IE-36 with accessories (Shelf Package - Water Resistant)	0.74	14	13	7	10

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Test Equipment IE-36 Including:		7CAC-801319-267 R16-T-1826-22 3F3933-36	11	10	4-4/10	5.4
1	Chest CH-234	Wood	7CAC-176567 R16-AYS-CH-234 2Z2599-234	10	9-7/8	4	4.5
1	Control Unit BC-1303	Metal	7CAC-234124 R16-AYS-BC-1303 2CK680-303	2-7/16	7-1/4	3-1/4	1.6

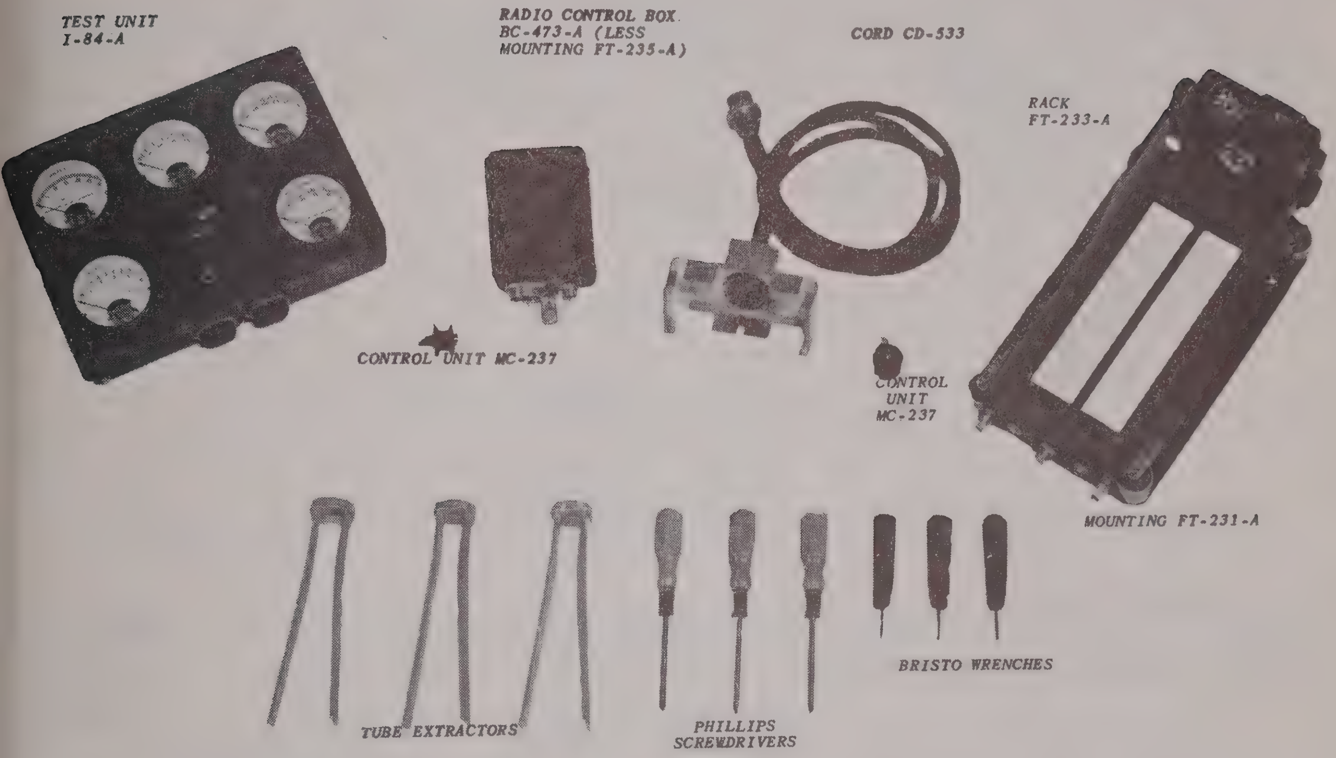
(Continued)

TEST EQUIPMENT IE-36
(TEST SET, RADIO IE-36)

EQUIPMENT SUPPLIED: (Continued)

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Phantom Antenna A-29		7CAC-274410 R16-A-4935 2A232-29	2-11/16 long	1-1/4 dia.		0.1
1	Cord (Adapter) CD-1169		7CAC-997715 R16-AYS-CD-1169 3E1999-169	15-3/4			0.3
1	Cord (Antenna) CD-1170		7CBR-AA113197-A R16-AYS-CD-1170 3E1999-170	38-3/4 long			0.125
1	Spanner Wrench Type 471		7900-868640 6RK57502-1	6 long			0.3
1	Lamp Extractor		7900-631980 6R41353A	4 long			0.3
1	Instruction Book		3F3933-36/B1				
1	Maintenance Kit (4 spare lamps)		3300-327148163 3F3933-36/K1				
						Total:	6.65

TEST SET RC-54-A
(TEST SET, RADIO, RC-54-A)


TEST UNIT I-84-A
RADIO CONTROL BOX BC-473-A (LESS MOUNTING FT-235-A)
CORD CD-533
RACK FT-233-A
CONTROL UNIT MC-237
CONTROL UNIT MC-237
MOUNTING FT-231-A
BRISTO WRENCHES
TUBE EXTRACTORS
PHILLIPS SCREWDRIVERS

FUNCTIONAL DESCRIPTION:

A multi-purpose test set used for bench-mockup checking of currents and voltages of the receivers of Radio Set SCR-274-N. It will measure primary source and vacuum tube voltages and currents.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Power Supply: None required.

Meter Ranges:

Direct Voltage: 0 to 30, 150 and 300 volts.

Direct Current: 0 to 25 milliamperes.
0 to 10 amperes.

Accuracy: ±2%.

	AIR FORCE	NAVY	ARMY
TYPE CLASS.	Limited Standard		3F4254A
STOCK NOS.	1690-327858000		

PROCUREM'T INFO.:

PROCUREM'T COG.: USAF — DESIGN COG.: USAF, C&N

FUNCTIONAL CLASS. NO.: 10.3.4.

F.I.I.N.: — RC-54-A

- Electronics Test Equipment -

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

TEST SET RC-54-A
(TEST SET, RADIO, RC-54-A)

MANUFACTURERS' OR CONTRACTORS' DATA:

Western Electric Company, New York, New York.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Test Set RC-54-A (Complete)		1690-327858000 3F4254A				
2	Control Unit MC-237		1600-287519800 2Z3224-237	1-1/4 long	1 dia.		0.016
1	Cord CD-706		7CWX-D152880 3E1706	67 long	2-1/8	5	1.190
2	Cord CD-531		7CAC-170264-955 3E1531	72 long	1-1/4 dia.		0.910

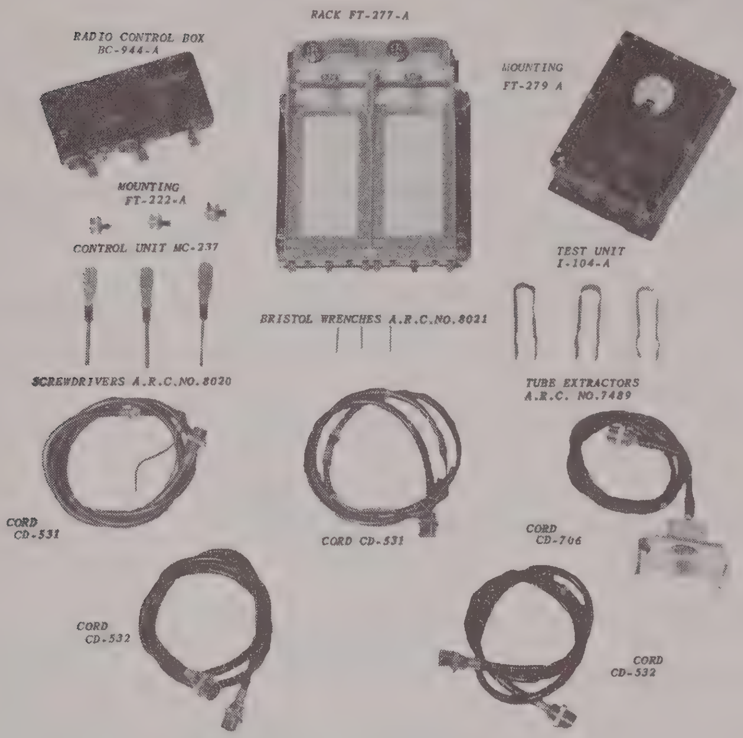
(Continued)

TEST SET RC-54-A
(TEST SET, RADIO, RC-54-A)

EQUIPMENT SUPPLIED: (Continued)

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Over-all Dimensions (inches)			Weight (Lbs.)
				H	W	D	
2	Cord CD-532		7CAC-170264-96 3E1532	63 long	1-1/4 dia.		1.000
1	Cord CD-533		7CWX-D152880 3E1533				
1	Mounting FT-231-A		1600-293004500 2Z6721-231A	1-5/8	6-11/16	10-23/32	0.700
1	Mounting FT-235-A		1600-293016500 2Z6721-235A	5/16	3-1/4	5-15/32	0.130
1	Rack FT-233-A		1600-294704300 2Z7380-233A	4-3/8	6-1/16	13-1/8	1.800
1	Radio Control Box BC-473-A		1600-214760000 2C3330A	3-1/4	5-15/32	2-7/8	0.800
1	Test Unit I-84-A		7CAC-801319-2583 3F4084A	4	10-3/8	8-1/2	
1	Set of Tools Consisting of:						
3	Phillips Screw Driver 8020			6-1/2 long	7/8 dia.		
3	Bristo Wrench No. 6 ES-696299		7900-859441 6R55230	5/8	1-3/8	4-5/8	
3	Tube Extractor						

TEST SET RC-54-B
(TEST SET, RADIO, RC-54-B)


RADIO CONTROL BOX BC-944-A
RACK FT-277-A
MOUNTING FT-279 A
MOUNTING FT-222-A
CONTROL UNIT MC-237
TEST UNIT I-104-A
BRISTOL WRENCHES A.R.C.NO.8021
SCREWDRIVERS A.R.C.NO.8020
TUBE EXTRACTORS A.R.C. NO.7489
CORD CD-531
CORD CD-531
CORD CD-706
CORD CD-532
CORD CD-532

FUNCTIONAL DESCRIPTION:

Special purpose ground station test equipment for depot testing and aligning of the receiving components of Radio Set SCR-274-N. Many of the components of RC-54-B are the same as, and interchangeable with components of SCR-274-N which permits the various units of that radio set to be tested by direct substitution in the test set-up.

RELATIONSHIP TO OTHER EQUIPMENT:

RC-54-B and RC-54-C perform same functions as RC-54-A, but differ in appearance and operation.

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The test set contains a meter and a switch by which the meter may be connected across various series and shunt resistors. These resistors are connected to various points in the power circuits of SCR-274-N so as to give meter indications of the operating currents and voltages.

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.	Limited Standard		
STOCK NOS.	1690-327858180		3F4254B

PROCUREM'T INFO.: Navy Spec. No. RE13A597A, Part No. 51

PROCUREM'T COG.: USAF DESIGN COG.: USAF, C&N

F.I.I.N.: FUNCTIONAL CLASS. NO.: 10.3.4

- Electronics Test Equipment - RC-54-B

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U.S.A.

TEST SET RC-54-B
(TEST SET, RADIO, RC-54-B)

ELECTROMECHANICAL DESCRIPTION: (Continued)

Power Supply: None required.

Meter Ranges:

Direct Voltage: 0 to 50, 200, and 500 volts.

Direct Current: 0 to 50 microamperes, 0 to 25 milliamperes, 0 to 10 amperes.

Accuracy: ±2%.

MANUFACTURERS' OR CONTRACTORS' DATA:

Colonial Radio Corporation, 254 Rano Street, Buffalo 7, New York; Order No. 595-WF-43.

Western Electric Company, New York, New York; Order No. 414-DAY-43, dated 24 February 1944.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 16-40RC55-2 (Maintenance Instructions).

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Test Set RC-54-B Including:		1690-327858180 3F4254B				
3	Control Unit MC-237		1600-287519800 2Z3224-237		1-1/4	1 dia.	0.024
2	Cord CD-531		7CAC-170264-955 3E1531		72	1-1/4 dia.	1.820
2	Cord CD-532		7CAC-170264-96 3E1532		63	1-1/4 dia.	2.000

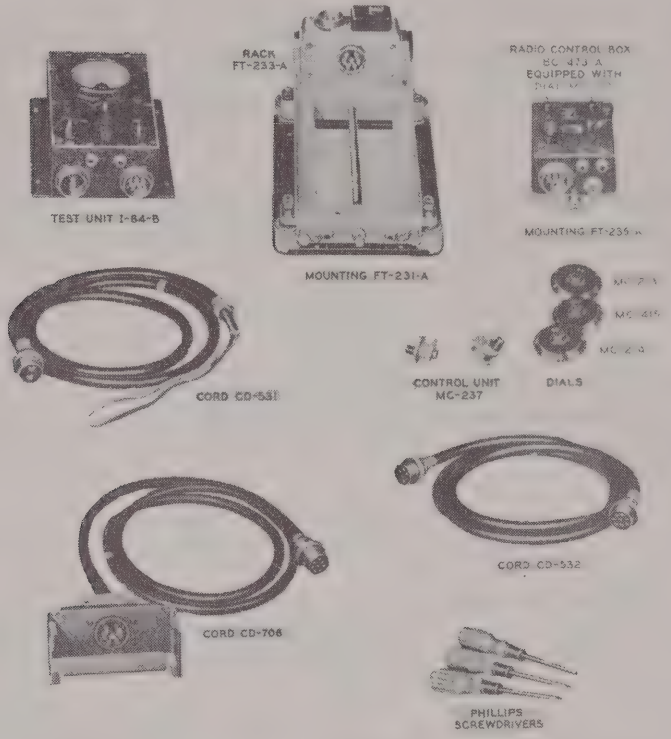
(Continued)

TEST SET RC-54-B
(TEST SET, RADIO, RC-54-B)

EQUIPMENT SUPPLIED: (Continued)

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Over-all Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Cord CD-706		7CWX-D152880 3E1706	2-1/8	67	5	1.190
1	Mounting FT-222-A		1600-292970500 2Z6721-222A				
1	Mounting FT-279-A		1600-29314800 2Z6721-279A				
1	Rack FT-277-A		1600-293147500 2Z7380-277A				
1	Radio Control Box BC-944-A		1600-214808000 2C3455-944A				
1	Test Unit I-104-A			3	5-1/2	7-1/2	2.500
2	Instruction Book						
1	Set of Tools Consisting of:						
3	Screwdriver ARC-8020				7/8 dia.	6-1/2	
3	Wrench No. 6 Bristo ARC-8021		7900-859441 6R55230	1-1/16	5/8	1-3/4	
3	Tube Extractor ARC-7489		3300-679981800 6RK41683	5/8	1-3/8	4-5/8	

TEST SET RC-54-C
(TEST SET, RADIO, RC-54-C)


RACK
FT-233-A
RADIO CONTROL BOX
EQUIPPED WITH
TEST UNIT I-64-B
MOUNTING FT-231-A
MOUNTING FT-235
CORD CD-531
CONTROL UNIT
MC-237
DIALS
CORD CD-532
CORD CD-706
PHILLIPS
SCREWDRIVERS

FUNCTIONAL DESCRIPTION:

A special purpose ground station test equipment for depot testing and aligning of the receiving components of Radio Set SCR-274-N. Many of the components of RC-54-C are the same as, and interchangeable with, components of SCR-274-N which permits the various units of that radio set to be tested by direct substitutions in the test setup.

RELATIONSHIP TO OTHER EQUIPMENT:

RC-54-B and RC-54-C perform same functions as RC-54-A but differ in appearance and operation.

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The test set contains a meter and a switch by which the meter may be connected across various series and shunt resistors. These resistors are connected to various points in the power circuits of SCR-274-N so as to give meter indications of the operating currents and voltages.

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.	Standard		
STOCK NOS.	1690-327858190		3F4254C

PROCUREM'T INFO.: Navy Spec. No. RE13A597A, Part No. 51

PROCUREM'T COG.: USAF   DESIGN COG.: USAF, C&N

FUNCTIONAL CLASS. NO.: 10.3.4

F.I.I.N.:

- Electronics Test Equipment -   RC-54-C

Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC

TEST SET RC-54-C
(TEST SET, RADIO, RC-54-C)

ELECTROMECHANICAL DESCRIPTION: (Continued)

Power Supply: None required.

Meter Ranges:

Direct Voltage: 0 to 50, 200, and 500 volts.

Direct Current: 0 to 20 milliamperes, 0 to 10 amperes.

Accuracy: ±2%.

MANUFACTURERS' OR CONTRACTORS' DATA:

Western Electric Company, New York, New York; Order No. 834-DAY-44.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 16-40RC55-3 (Maintenance Instructions).

TO 16-55-244 (Spare Parts List).

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Test Set RC-54-C Including:		1690-327858190 3F4254C				
2	Control Unit MC-237		1600-287519800 2Z3224-237	1-1/4	1 dia.		0.016
1	Cord CD-531		7CAC-170264-955 3E1531	72 long	1-1/4 dia.		0.910
1	Cord CD-532		7CAC-170264-96 3E1532	63 long	1-1/4 dia.		1.000

(Continued)

TEST SET RC-54-C
(TEST SET, RADIO, RC-54-C)

EQUIPMENT SUPPLIED: (Continued)

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Over-all Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Cord CD-706		7CWX-D152880 3E1706	67	2-1/8	5	1.190
1	Dial MC-212		3300-291436000 2Z3762-12	3/4	2 dia.		0.016
1	Dial MC-213		3300-291437500 2Z3762-13	3/4	2 dia.		0.016
1	Dial MC-214		3300-291439000 2Z3762-14	3/4	2 dia.		0.016
1	Dial MC-415		3300-291449500 2Z3763-115	3/4	2 dia.		0.016
1	Mounting FT-231-A		1600-293004500 2Z6721-231A	1-5/8	6-11/16	10-23/32	0.70
1	Mounting FT-235-A		1600-293016500 2Z6721-235A	5/16	3-1/4	5-15/32	0.13
1	Rack FT-233-A		1600-294704300 2Z7380-233A	4-3/8	6-1/16	13-1/8	1.80
1	Radio Control Box BC-473-A		1600-214760000 2C3330A	2-7/8	3-1/4	5-15/32	0.80
1	Test Unit I-84-B		7CAC-801319-262 3F4084B	3	5-1/2	7-1/2	2.50
2	Instruction Diagram ES-692031				20	33	0.15
1	Set of Tools Including:						0.44

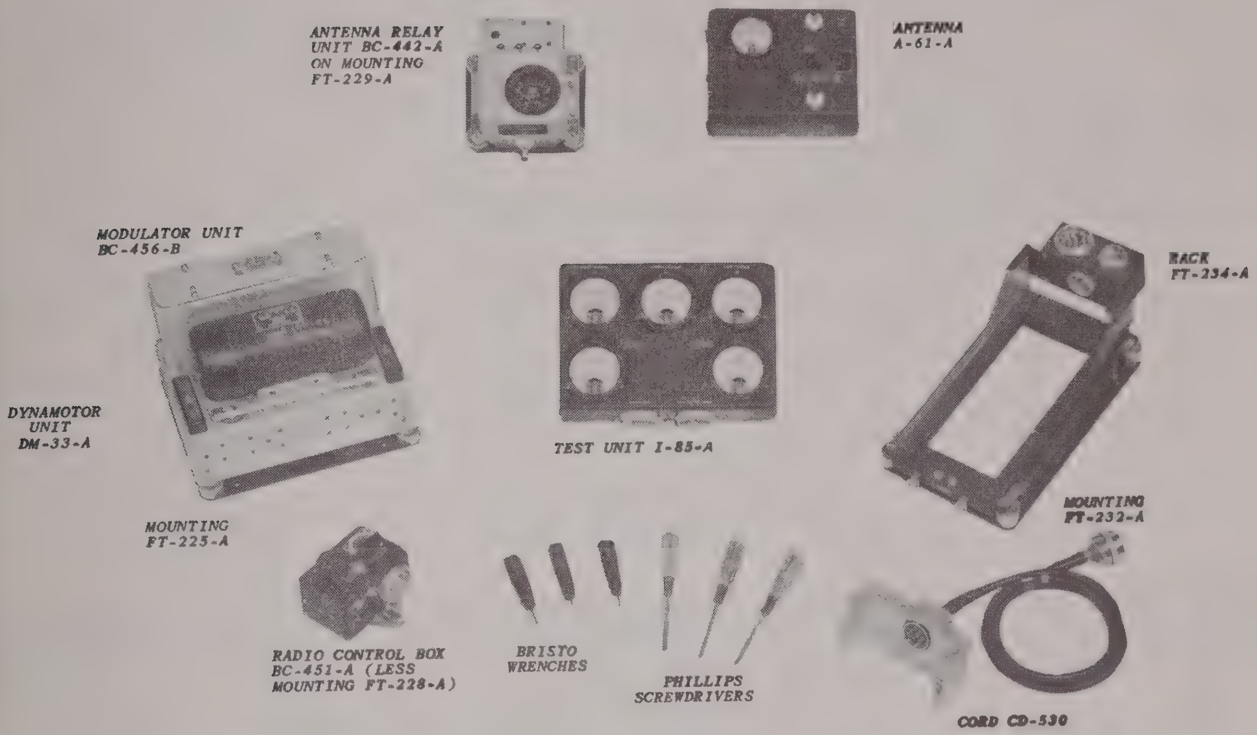
(Continued)

TEST SET RC-54-C
(TEST SET, RADIO, RC-54-C)

EQUIPMENT SUPPLIED: (Continued)

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Over-all Dimensions (inches)			Weight (Lbs.)
				H	W	D	
3	Tube Extractor ES-696299		3300-679981800 6RK41683	5/8	1-3/8	4-5/8	
3	Bristo Wrench ES-694746		7900-859441 6R55230	1-1/16	5/8	1-3/4	
3	Phillips Screwdriver 8020			7/8 dia.			

TEST SET RC-55-A
(TEST SET, RADIO, RC-55-A)


ANTENNA RELAY UNIT BC-442-A ON MOUNTING FT-229-A
ANTENNA A-61-A
MODULATOR UNIT BC-456-B
RACK FT-234-A
DYNAMOTOR UNIT DM-33-A
TEST UNIT I-85-A
MOUNTING FT-232-A
MOUNTING FT-225-A
RADIO CONTROL BOX BC-451-A (LESS MOUNTING FT-228-A)
BRISTO WRENCHES
PHILLIPS SCREWDRIVERS
CORD CD-530

FUNCTIONAL DESCRIPTION:

A multi-purpose test set used for bench-mockup checking of currents and voltages of the transmitters of Radio Set SCR-274-N. It will measure heater circuit voltage, plate voltage, screen voltage, plate current, and antenna current.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Power Supply: None required.
Meter Ranges:
  Direct Voltage: 0 to 30, 500, and 750 volts.
  Direct Current: 0 to 30 and 250 milliamperes.
Accuracy: ±2% meter, ±4% overall.

	AIR FORCE	NAVY	ARMY
TYPE CLASS.	Limited Standard		
STOCK NOS.	1690-327860000		3F4255A

PROCUREM'T INFO.:
PROCUREM'T COG.: USAF DESIGN COG.: USAF, C&N
FUNCTIONAL CLASS. NO.: 10.3.4
F.I.I.N.:
- Electronics Test Equipment - RC-55-A

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.,

TEST SET RC-55-A
(TEST SET, RADIO, RC-55-A)

MANUFACTURERS' OR CONTRACTORS' DATA:

Western Electric Company, New York, New York; Approximate Cost per Unit, $537.00.

TUBE COMPLEMENT:

1 JAN-12J5GT, 1 JAN-1625, 1 JAN-OD3/VR150.

REFERENCE DATA AND LITERATURE:

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Test Set RC-55-A Including:		1690-327860000 3F4255A				
1	Antenna A-61-A		7CAC-274367 2A261A	3-5/8	7-3/16	6-9/16	1.9
1	Antenna Relay Unit BC-442-A		1690-211369500 2CK492-442A	3-3/4	5-1/16	5	1.4
1	Dynamotor DM-33-A		1690-338732000 3H1633A	4-3/16	3-1/2	7-3/4	7.9

(Continued)

TEST SET RC-55-A
(TEST SET, RADIO, RC-55-A)

EQUIPMENT SUPPLIED: (Continued)

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Over-all Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Modulator Unit BC-456-B		1800-213400000 2C2500-456B	6-11/16	10-3/16	8-1/4	9.5
1	Test Unit I-85-A		7CAC-801319-2624 3F4085A	3-5/8	10	6-9/16	27.0
1	Radio Control Box BC-451-A		1600-214736000 2C3329A	2-11/16	4-1/8	4-3/8	0.7
1	Mounting FT-225-A		1600-292982500 2Z6721-225A	1-5/16	10-3/16	8-7/8	0.8
1	Mounting FT-232-A		1600-293006000 2Z6721-232A	1-5/8	7-1/4	11-13/16	0.8
1	Mounting FT-228-A		1600-292993000 2Z6721-228A	5/16	4-1/8	4-1/8	0.1
1	Mounting FT-229-A		1600-292999000 2Z6721-229A	1-1/4	5-5/8	5	0.3
1	Rack FT-234-A		1600-294705800 2Z7380-234A	3-15/16	6-5/8	14-5/8	1.1
2	Cord CD-524		7CWN-5804 3E1524	63 long	1-3/4 dia.		1.3
1	Cord CD-525		7CAC-170264-94 3E1525	73 long	1-1/4 dia.		0.9
1	Cord CD-526		7CAC-170264-945 3E1526	63 long	1-3/4 dia.		1.4
1	Cord CD-527		7CAC-170270-1364 3E1527	63 long	1-1/4 dia.		0.9

(Continued)

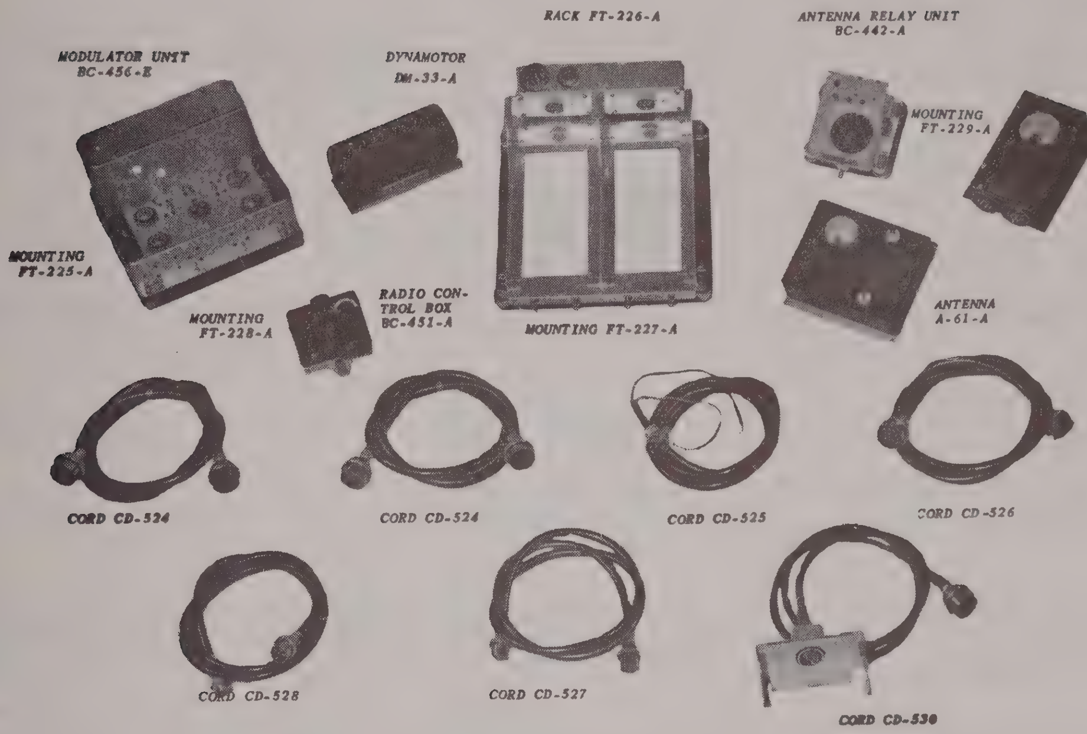
594

TEST SET RC-55-A
(TEST SET, RADIO, RC-55-A)

EQUIPMENT SUPPLIED: (Continued)

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Over-all Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Cord CD-528		7CWN-6794 3E1528	63 long	1-1/4 dia.		0.9
1	Cord CD-530		7CAC-170264-95 3E1530	65	3	5-1/2	1.1
3	Bristo Wrench						
3	Phillips Screwdriver						
						Total:	58.25

TEST SET RC-55-B
(TEST SET, RADIO, RC-55-B)


RACK FT-226-A
ANTENNA RELAY UNIT BC-442-A
MODULATOR UNIT BC-456-E
DYNAMOTOR DM-33-A
MOUNTING FT-229-A
TEST UNIT I-85-B
MOUNTING FT-225-A
RADIO CONTROL BOX BC-451-A
MOUNTING FT-228-A
MOUNTING FT-227-A
ANTENNA A-61-A
CORD CD-524
CORD CD-524
CORD CD-525
CORD CD-526
CORD CD-528
CORD CD-527
CORD CD-530

FUNCTIONAL DESCRIPTION:

A special purpose ground station test equipment for depot testing and aligning of the transmitting components of Radio Set SCR-274-N. Many of the components of RC-55-B are the same as, and interchangeable with, components of SCR-274-N, which permits the various units of that radio set to be tested by direct substitution in the test set-up.

RELATIONSHIP TO OTHER EQUIPMENT:

RC-55-B and RC-55-C perform same functions as RC-54-A but differ in appearance and operation.

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The test set contains a meter and a switch by which the meter may be connected across various series and shunt resistors. These resistors are connected to various points in the power circuits of SCR-274-N so as to give meter indications of the operating currents and voltages.

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.	Limited Standard		
STOCK NOS.	1690-327860010		3F4255B
PROCUREM'T INFO.:	Navy Spec. No. RE-13A597A, Part No. 52		
PROCUREM'T COG.:	USAF	DESIGN COG.:	USAF, C&N
F.I.I.N.:		FUNCTIONAL CLASS. NO.:	10.3.4

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

TEST SET RC-55-B
(TEST SET, RADIO RC-55-B)

ELECTROMECHANICAL DESCRIPTION: (Continued)

Power Supply: None required.

Meter Ranges:

Direct Voltage: 0 to 50, 500, and 1000 volts.

Direct Current: 0 to 50 and 250 milliamperes.

Accuracy: ±4% overall; ±2% meter.

MANUFACTURERS' OR CONTRACTORS' DATA:

Western Electric Company, New York, New York; 24 February 1944; Contract No. 414-DAY-43; Approximate Cost per Unit, $422.00.

Colonial Radio Corporation, 254 Rano Street, Buffalo 7, New York; Order No. 595-WF-43.

TUBE COMPLEMENT:

1 JAN-12J5GT, 1 JAN-1625, 1 JAN-OD3/VR150.

REFERENCE DATA AND LITERATURE:

TO 16-40RC55-2 (Maintenance Instructions).

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Test Set RC-55-B Including:		1690-327860010 3F4255B				
1	Antenna A-61-A		7CAC-274367 2A261A	3-5/8	7-3/16	6-9/16	1.9
1	Antenna Relay Unit BC-442-A		1690-211369500 2CK492-442A	3-3/4	5-1/16	5	1.4
2	Cord CD-524		7CWN-5804 3E1524	63 long	1-3/4 dia.		1.3

(Continued)

TEST SET RC-55-B
(TEST SET, RADIO, RC-55-B)

EQUIPMENT SUPPLIED: (Continued)

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Over-all Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Cord CD-525		7CAC-170264-94 3E1525	73 long	1-1/4 dia.		0.9
1	Cord CD-526		7CAC-170264-945 3E1526	63 long	1-3/4 dia.		1.4
1	Cord CD-527		7CAC-170270-1364 3E1527	63 long	1-1/4 dia.		0.9
1	Cord CD-528		7CWN-6794 3E1528	63 long	1-1/4 dia.		0.9
1	Cord CD-530		7CAC-170264-95 3E1530	65	3	5-1/2	1.1
1	Dynamotor DM-33-A		1690-338731000 3H1633-A	4-3/16	3-1/2	7-3/4	7.9
1	Modulator Unit BC-456-B or E		1600-213424000 2C2500-456B	6-11/16	10-3/16	8-1/4	9.5
1	Mounting FT-225-A		1600-292982500 2Z6721-225A	1-5/16	10-3/16	8-7/8	0.8
1	Mounting FT-227-A						
1	Mounting FT-228-A		1600-292993000 2Z6721-228A	5/16	4-1/8	4-1/8	0.1
1	Mounting FT-229-A		1600-292999000 2Z6721-229A	1-1/4	5-5/8	5	0.3
1	Rack FT-226-A		1600-294697500 2Z7380-226A				

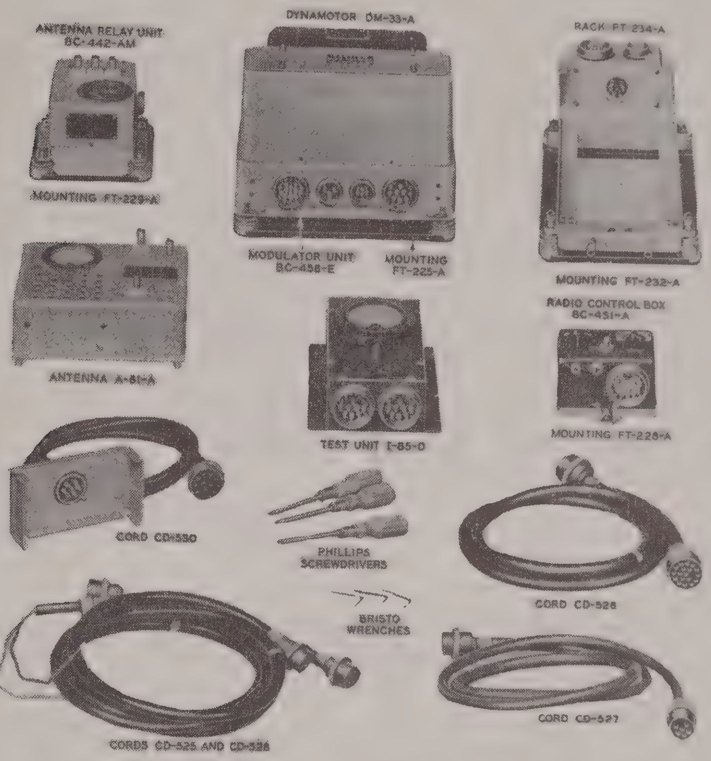
(Continued)

TEST SET RC-55-B
(TEST SET, RADIO, RC-55-B)

EQUIPMENT SUPPLIED: (Continued)

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Over-all Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Test Unit I-85-B		7CAC-801319-2623 3F4085-B	3	5-1/2	7-1/2	2.65
1	Radio Control Box BC-451-A		1600-214735000 2C3329A	2-11/16	4-1/8	4-3/8	0.7
2	Instruction Book						

TEST SET RC-55-C
(TEST SET, RADIO, RC-55-C)


ANTENNA RELAY UNIT BC-442-AM
MOUNTING FT-229-A
DYNAMOTOR DM-33-A
RACK FT 234-A
MODULATOR UNIT BC-456-E
MOUNTING FT-225-A
MOUNTING FT-232-A
RADIO CONTROL BOX BC-451-A
ANTENNA A-61-A
TEST UNIT I-85-D
MOUNTING FT-226-A
CORD CD-530
PHILLIPS SCREWDRIVERS
BRISTO WRENCHES
CORD CD-526
CORDS CD-525 AND CD-528
CORD CD-527

FUNCTIONAL DESCRIPTION:

Special purpose ground station test equipment for depot testing and aligning of the transmitting components of Radio Set SCR-274-N. Many of the components of RC-55-C are the same as, and interchangeable with, components of SCR-274-N, which permits the various units of that radio set to be tested by direct substitution in the test set-up.

RELATIONSHIP TO OTHER EQUIPMENT:

RC-55-B and RC-55-C perform same functions as RC-54-A but differ in appearance and operation.

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The test set contains a meter and a switch by which the meter may be connected across various series and shunt resistors. These resistors are connected to various points in the power circuits of SCR-274-N so as to give meter indications of the operating currents and voltages.

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.	Standard		
STOCK NOS.	7CAC-801319-2941		3F4255C

PROCUREM'T INFO.: Navy Spec. No. RE-13A597A, Part No. 52

PROCUREM'T COG.: USAF DESIGN COG.: USAF, C&N

F.I.I.N.: FUNCTIONAL CLASS. NO.: 10.3.4

- Electronics Test Equipment - RC-55-C

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

TEST SET RC-55-C
(TEST SET, RADIO, RC-55-C)

ELECTROMECHANICAL DESCRIPTION: (Continued)
Power Supply: None required.
Meter Ranges:
Direct Voltage: 0 to 50, 500, and 1000 volts.
Direct Current: 0 to 50 and 250 milliamperes.
Accuracy: ±4% overall; ±2% meter.

MANUFACTURERS' OR CONTRACTORS' DATA:
Western Electric Company, New York, New York; Order No. 834-**DAY-44**.

TUBE COMPLEMENT:
1 JAN-12J5GT, 1 JAN-1625, 1 JAN-OD3/VR150.

REFERENCE DATA AND LITERATURE:
TO 16-40RC55-3 (Maintenance Instructions).
TO 16-55-244 (Spare Parts List).

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Test Set RC-55-C Including:		7CAC-801319-2941 3F4255C				
1	Antenna A-61-A		7CAC-274367 2A261A	3-5/8	7-3/16	6-9/16	1.9
1	Antenna Relay Unit BC-442-AM		1690-211375000 2CK492-442AM	3-3/4	5-1/16	5	1.4
2	Cord CD-524		7CWN-5804 3E1524	63 long	1-3/4 dia.		1.3

(Continued)

TEST SET RC-55-C
(TEST SET, RADIO, RC-55-C)

EQUIPMENT SUPPLIED: (Continued)

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Over-all Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Cord CD-525		7CAC-170264-94 3E1525	73 long	1-1/4 dia.		0.9
1	Cord CD-526		7CAC-170264-945 3E1526	63 long	1-3/4 dia.		1.4
1	Cord CD-527		7CAC-170270-1364 3E1527	63 long	1-1/4 dia.		0.9
1	Cord CD-528		7CWN-6794 3E1528	63 long	1-1/4 dia.		0.9
1	Cord CD-530		7CAC-170264-95 3E1530	65	3	5-1/2	1.1
1	Dynamotor DM-33-A		1690-338732000 3H1633A	4-3/16	3-1/2	7-3/4	7.9
1	Modulator Unit BC-456-E		1600-213430000 2C2500-456E	6-11/16	10-3/16	8-1/4	9.5
1	Mounting FT-225-A		1600-292982500 2Z6721-225A	1-5/16	10-3/16	8-7/8	0.8
1	Mounting FT-228-A		1600-292993000 2Z6721-228A	5/16	4-1/8	4-1/8	0.1
1	Mounting FT-229-A		1600-292999000 2Z6721-229A	1-1/4	5-5/8	5	0.3
1	Mounting FT-232-A		1600-293006000 2Z6721-232A	1-5/8	7-1/4	11-13/16	0.8
1	Test Unit I-85-D		7CAC-801319-2623 3F4085D	3	5-1/2	7-1/2	2.65

(Continued)

TEST SET RC-55-C
(TEST SET, RADIO, RC-55-C)

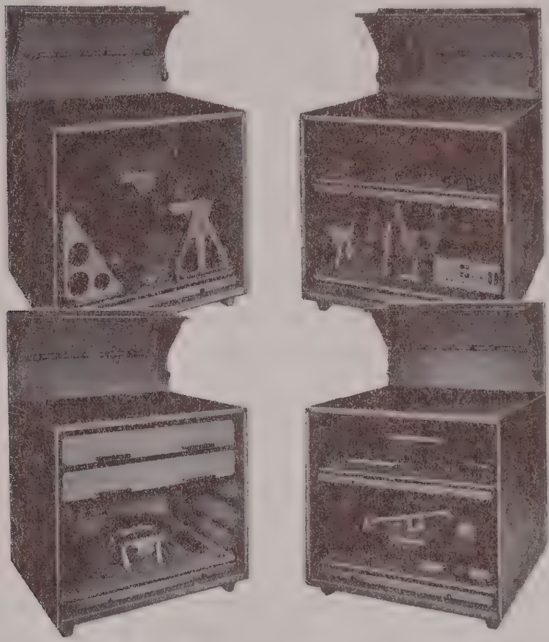
EQUIPMENT SUPPLIED: (Continued)

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Over-all Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Radio Control Box BC-451-A		1600-214736000 2C3329A	2-11/16	4-1/8	4-3/8	0.7
1	Rack FT-234-A		1600-294705800 2Z7380-234A	3-15/16	6-5/8	14-5/8	1.1
2	Instruction Diagram ES-692031				20	33	0.15
3	Bristo Wrench 8021						
3	Phillips Screwdriver 8020			7/8 dia.	6-1/2		
						Total:	34.05

TEST BENCH, MAINTENANCE (COMPLETE)

Part No. 404000-110

(Hughes Aircraft Company)



FUNCTIONAL DESCRIPTION:

The test bench is designed for use in detecting faulty components of the E-4 Fire Control System. It is also used in repairing, aligning, and testing faulty systems. The bench provides a means for mounting an E-4 System of known performance with the proper connections for substituting components of a faulty system; by elimination, the malfunctioning component can be determined. In addition, the test bench provides facilities for storing and transporting a complete E-4 Fire Control System.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Physical Characteristics: The equipment consists of four test stands equipped with removably fronts and individual shelf and drawer assemblies. The shelves and drawer are arranged to accomodate the E-4 Fire Control System and the electrical units necessary for testing the system. A control console, cable terminal chamber, waveguide assembly, and cables are supplied with the test bench.

Circuit Information: The control console monitors the AC and DC voltage supplies; positions and controls the antenna and drive motors; controls the high voltage

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-112284-6		
PROCUREM'T INFO.:		DESIGN COG.: Commercial	
PROCUREM'T COG.:		FUNCTIONAL CLASS. NO.: 10.3.4	
F.I.I.N.:			Hughes 404000-110
	- Electronics Test Equipment -		

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U.S.A

TEST BENCH, MAINTENANCE (COMPLETE)
Part No. 404000-110
(Hughes Aircraft Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)

supply to the modulator; and disables the space stabilization loop. The cable terminal chamber provides connections for the various test sets used with the bench assembly.

Power Supply: 115 volts, AC, 60 cycles per second, single-phase;
115 volts, AC, 380 to 420 cycles per second, single-phase;
115 volts, AC, 380 to 1000 cycles per second, single-phase;
28 volts, DC, 1170 watts (maximum).

Simulated Temperature: +70°F. (+21°C.).

Simulated Altitude: 15,000 feet.

MANUFACTURERS' OR CONTRACTORS' DATA:

Hughes Aircraft Corporation, Florence and Teale Street, Culver City, California; Approximate Cost per Unit, $11652.00.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO-33D5-13-8-1 (Operation and Service Instructions).
TO-33D5-13-8-4 (Parts Catalog).

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Test Bench, Maintenance (Complete) (Hughes 404000-110)		7CAC-112284-6				
4	Test Box 404200-100	Aluminum		Vol:	26.5 cu.	feet each	
1	Installation Kit 404090-100						

(continued)

TEST BENCH, MAINTENANCE (COMPLETE)

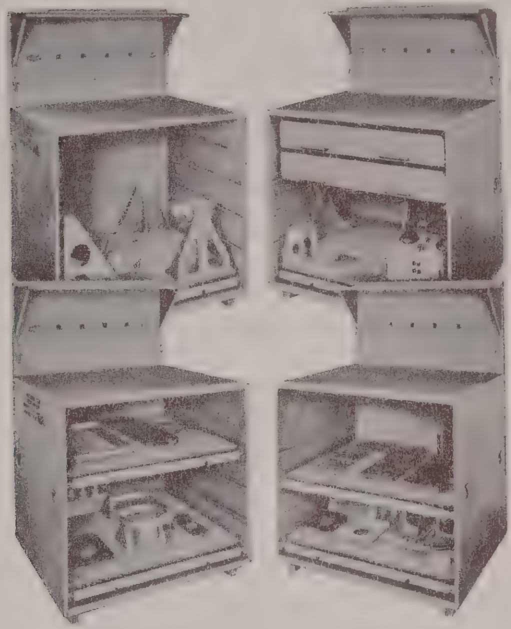
Part No. 404000-110

(Hughes Aircraft Company)

EQUIPMENT SUPPLIED: (Continued)

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Wiring Harness 404098-100						
1	Wiring Harness 404198-100						
1	Cable Assy. 404093-100						
1	Cable Assy. 404193-100						
1	Cable Kit 404293-100						
2	Drawer 404092-100						
1	Cable Terminal Chamber 404097-100						
1	Control Console 404087-100						
6	Shelf Assy.						
			Total Weight (including fire control system):				1301

TEST BENCH, MAINTENANCE
Part No. 404000-111
(Hughes Aircraft Company)



FUNCTIONAL DESCRIPTION:

The test bench is designed for use in detecting faulty components of the E-5 Fire Control System. It is also used in repairing, aligning, and testing faulty systems. The bench provides a means for mounting an E-5 System of known performance with the proper connections for substituting components of a faulty system; by elimination, the malfunctioning component can be determined. In addition, the test bench provides facilities for storing and transporting a complete E-5 Fire Control System.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Physical Characteristics: The equipment consists of four test stands equipped with removable fronts and individual shelf and drawer assemblies. The shelves and drawers are arranged to accommodate the E-5 Fire Control System and the electrical units necessary for testing the system. A control console, computer chamber, waveguide assembly, and cables are supplied with the test bench.

Circuit Information: The control console monitors the AC and DC voltage supplies;

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-112284-7		
PROCUREM'T INFO.:		DESIGN COG.: Commercial	
PROCUREM'T COG.:		FUNCTIONAL CLASS. NO.: 10.3.4	
F.I.I.N.:		Hughes 404000-111	
- Electronics Test Equipment -			

Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC -

TEST BENCH, MAINTENANCE
Part No. 404000-111
(Hughes Aircraft Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)

positions and controls the antenna and drive motors; controls the high voltage supply to the modulator, and disables the space stabilization loop. The computer chamber provides connections for a computer service and alignment test set.

Power Supply: 115 volts, AC, 380 to 420 cycles per second, single-phase;
115 volts, AC, 380 to 1000 cycles per second, single-phase;
115 volts, AC, 60 cycles per second, single-phase;
28 volts, DC, 1000 watts (maximum).

Simulated Temperature: +70°F. (+21°C.).

Simulated Altitude: 15, 000 feet.

MANUFACTURERS' OR CONTRACTORS' DATA:

Hughes Aircraft Co., Culver City, Calif.; Approx. Cost per Unit, $11652.00.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 33D5-13-9-1 (Operation and Service Instructions).
TO 33D5-13-9-4 (Parts Catalog).

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Test Bench, Maintenance (Hughes 404000-111)		7CAC-112284-7				
	Including:						
4	Test Stand 404200-100	Aluminum		Vol: 2 9 cu. feet each			
1	Installation Kit 404090-100						

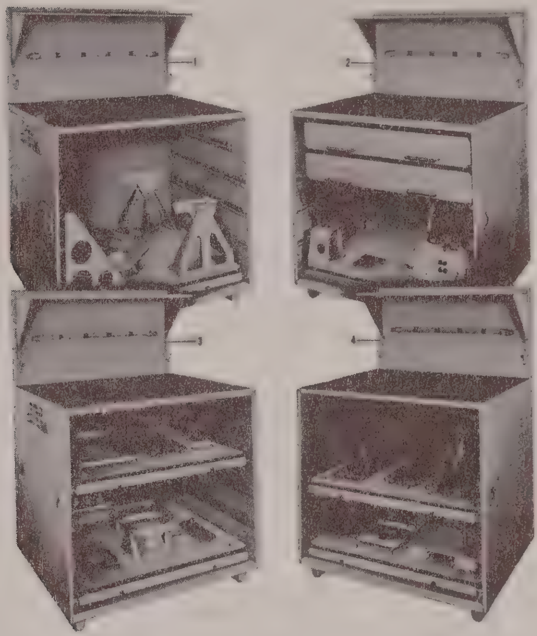
(Continued)

TEST BENCH, MAINTENANCE
Part No. 404000-111
(Hughes Aircraft Company)

EQUIPMENT SUPPLIED: (Continued)

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Wiring Harness 404398-100						
1	Wiring Harness 404498-100						
1	Cable Assy. 404093-100						
1	Cable Assy. 404193-100						
1	Cable Kit 404293-100						
2	Drawer 404092-100						
1	Computer Chamber 404197-100						
1	Control Console 404087-100						
6	Shelf Assy.						
			Total (including fire control assembly):				1331

TEST BENCH, MAINTENANCE (COMPLETE)
Part No. 404000-112
(Hughes Aircraft Company)



FUNCTIONAL DESCRIPTION:

The test bench is designed for use in detecting faulty components of the E-6 and MG-6 Fire Control Systems. It is also used in repairing, aligning, and testing faulty systems. The bench provides a means for mounting an E-6 or MG-6 Fire Control System of known performance with the proper connections for substituting components of a faulty system; by elimination, the malfunctioning component can be determined. In addition, the test bench provides facilities for transporting and storing a complete E-6 or MG-6 Fire Control System.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Physical Characteristics: The equipment consists of four test stands equipped with removable fronts and individual shelf and drawer assemblies. The shelves and drawer are arranged to accommodate the fire control system and the electrical units necessary for testing the system. A control console, cable terminal chamber, and cables are supplied with the test bench.

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-112284-8		
PROCUREM'T INFO.:			
PROCUREM'T COG.:	DESIGN COG.: Commercial		
F.I.I.N.:	FUNCTIONAL CLASS. NO.: 10.3.4		
	- Electronics Test Equipment -	Hughes 404000-112	

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U.S.A.

TEST BENCH, MAINTENANCE (COMPLETE)

Part No. 404000-112
(Hughes Aircraft Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)

Circuit Information: The control console monitors the AC and DC voltage supplies; positions and controls the antenna and drive motors; controls the high voltage supply to the modulator; and disables the space stabilization loop. The cable terminal chamber provides connections for the various test sets used with the bench assembly.

Power Supply: 115 volts, AC, 380 to 420 cycles per second, single-phase;
115 volts, AC, 380 to 1000 cycles per second, single-phase;
28 volts, DC, 1000 watts (maximum).

MANUFACTURERS' OR CONTRACTORS' DATA:

Hughes Aircraft Company, Culver City, California; Contract No. AF 33(038) 17618; Approximate Cost per Unit, $11652.00.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 33D5-13-10-1 (Operation and Service Instructions).
TO 33D5-13-10-4 (Parts Catalog).

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Test Bench, Maintenance (Hughes 404000-112)		7CAC-112284-8	Vol: 2	6.5 Cu.	Ft.	
	Including:						
4	Test Box 404200-100						
6	Shelf Assy.						

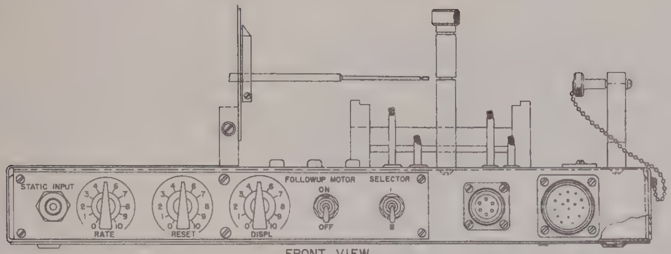
(continued)

TEST BENCH, MAINTENANCE (COMPLETE)
Part No. 404000-112
(Hughes Aircraft Company)

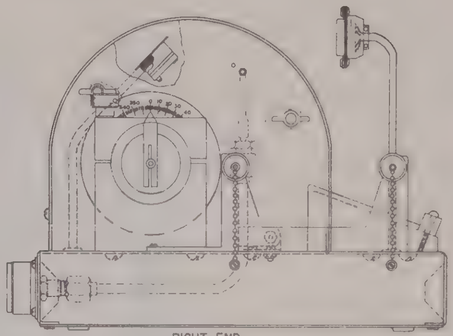
EQUIPMENT SUPPLIED: (Continued)

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Control Console 404087-100						
1	Cable Terminal Chamber 404297-100						
2	Drawer 404092-100						
1	Wiring Harness W-1 404398-100						
1	Wiring Harness W-2-404598-100						
1	Wiring Harness W-3 404093-100						
1	Electrical Power Cable Assy. W-5 404193-100						
1	Installation Kit 404090-100						
1	Cable Kit 404293-100						
4	Mounting Bracket						
			Total weight (including fire control system): 1317				

TESTER, MOCKUP, ALTITUDE CONTROL
Part No. UG 98A-1
(Minneapolis-Honeywell Regulator Company)



FRONT VIEW



RIGHT END

FUNCTIONAL DESCRIPTION:

An overhaul tool providing a breadboard assembly for adjustment and testing of the Altitude Control PG 7030B. The tester contains mounting devices, electrical circuitry, and controls that are used to position and interconnect all of the altitude control components while they are being calibrated. The following operations can be performed on the tester: (1) each component of the altitude control system will operate from an applied signal, (2) the displacement, rate, and reset recentering signals can be adjusted and signals measured, (3) reset motor and switch can be adjusted.

RELATIONSHIP TO OTHER EQUIPMENT:

Used with Minneapolis-Honeywell UG 117A-1 Electrical Tester.

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: Provision is made for interconnecting and mounting the sense unit, followup motor, relay compartment, and reset motor of the equipment under test. The unit or units under test must be mounted on the tester. The altitude control tester is used in connection with the UG 117A-1 Electrical Tester which

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-801680		
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.3.4	
	- Electronics Test Equipment - M. Honeywell UG 98A-1		

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

TESTER, MOCKUP, ALTITUDE CONTROL
Part No. UG 98A-1
(Minneapolis-Honeywell Regulator Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)
provides power and contains the switching arrangement necessary to carry out the required tests.

Power Supply: 115 volts, AC, 400 cycles per second, single phase; 28 volts, DC. Both are supplied by the UG 117A-1 Electrical Tester.

MANUFACTURERS' OR CONTRACTORS' DATA:
Minneapolis-Honeywell Regulator Company, Aeronautical Division, 2600 Ridway Road, Minneapolis 13, Minnesota; Contract No. AF 33(600)22799.

TUBE COMPLEMENT:
None.

REFERENCE DATA AND LITERATURE:
Minneapolis-Honeywell Engineering Specification No. 4206A.
Minneapolis-Honeywell Dwg. UG 98A-1, Sheet 1 and 2.

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

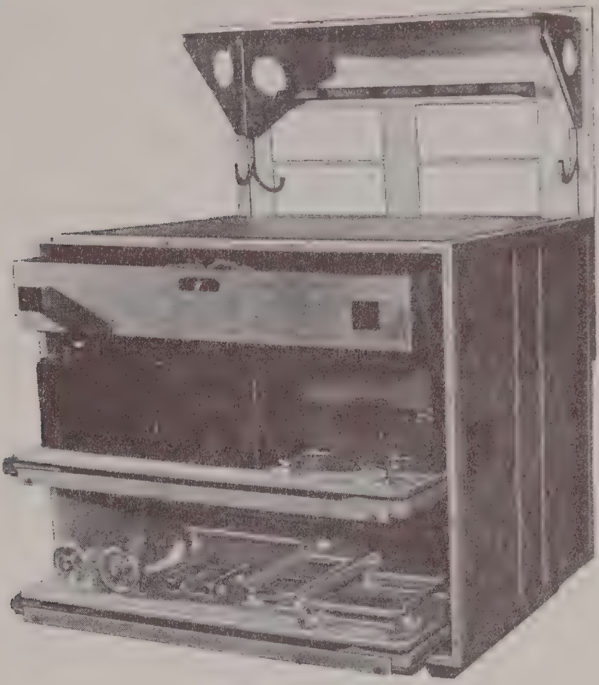
EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Tester, Mockup, Altitude Control (Honeywell UG 98A-1)		7CAC-801680	8	17	11	9-3/4

BENCH, FLYAWAY, MH-11C1 AUTOPILOT

Part No. UG154A-1

(Minneapolis-Honeywell Regulator Company)



FUNCTIONAL DESCRIPTION:

A transportable autopilot mockup test bench which is used for making functional checks on components of the MG-11C1 Automatic Pilot. The UG153A-1 Field Tester may be used in conjunction with this bench to simulate J-2 compass system signals and ILS signals to the localizer and glide slope couplers.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The test bench contains two shelves on which components to be tested are mounted, two wiring harnesses for making electrical connections, and a control box for power control and measurement. An auxiliary pressure pump is connected to the fittings of the airspeed compensator, and an auxiliary vacuum pump is connected to the fittings of the altitude control and compensator.

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-112165		

PROCUREM'T INFO.:

PROCUREM'T COG.: DESIGN COG.: Commercial

F.I.I.N.: FUNCTIONAL CLASS. NO.: 10.3.4

- Electronics Test Equipment - Honeywell UG 154A-1

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

BENCH, FLYAWAY, MH-11C1 AUTOPILOT
Part No. UG154A-1
(Minneapolis-Honeywell Regulator Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)

Functional checks of any of the autopilot components may be made. Vertical and rate gyro signals may be obtained by loosening the clamps from the gyro feet and shifting the unit to simulate roll, pitch, and yaw. Signals may be obtained from the airspeed and altitude compensators and controls by applying pressure and vacuum, respectively, to the fittings. Two voltmeters indicate input line voltages, and a DC ammeter indicates current drawn by the mockup bench.

Power Supply: 115 volts, AC, 400 cycles per second, single-phase.
28 volts, DC.

AC Voltmeter Range: 0 to 150 volts.

DC Voltmeter Range: 0 to 50 volts.

DC Ammeter Range: 0 to 25 amperes.

MANUFACTURERS' OR CONTRACTORS' DATA:

Vendor: Minneapolis-Honeywell Regulator Company, Aeronautical Division, 2600 Ridway Road, Minneapolis 13, Minnesota.

Contractor: Douglas Aircraft Company, Incorporated, Long Beach 1, California; Contract No. AF 33(600)16314.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 33D3-9-9-1 (Instructions and Parts Breakdown).

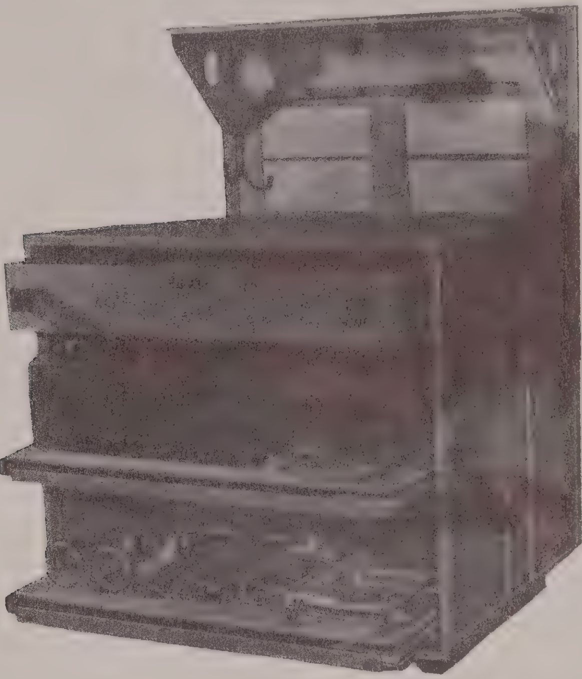
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Bench, Flyaway MH-11C1 Autopilot (Minneapolis-Honeywell UG154A-1)	Aluminum and Wood	7CAC-112165	34-1/4	40-1/4	34-1/4	

BENCH, FLYAWAY, MH-11C2 AUTOPILOT
Part No. UG 198A-1
(Minneapolis-Honeywell Regulator Company)



FUNCTIONAL DESCRIPTION:

A transportable autopilot mockup test bench which is used for making functional checks on components of the MH-11C2 Automatic Pilot. The UG153A-1 Field Tester may be used in conjunction with this bench to simulate J-2 compass system signals and ILS signals to the localizer and glide slope couplers.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: The test bench contains two shelves on which components to be tested are mounted, two wiring harnesses for making electrical connections, and a control box for power control and measurement. An auxiliary pressure pump is connected to the fittings of the airspeed compensator, and an auxiliary vacuum pump is connected to the fittings of the altitude control and compensator. Functional checks of any of the autopilot components may be made. Vertical and rate gyro signals may be obtained by loosening the clamps from the gyro feet and shifting the unit to simulate roll, pitch, and yaw. Signals may be obtained from the airspeed and altitude compensators and controls by applying pressure and

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-112283		

PROCUREM'T INFO.:
PROCUREM'T COG.: DESIGN COG.: Commercial
F.I.I.N.: FUNCTIONAL CLASS. NO.: 10.3.4
- Electronics Test Equipment -M. Honeywell UG 198A-1

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

BENCH, FLYAWAY, MH-11C2 AUTOPILOT
Part No. UG 198A-1
(Minneapolis-Honeywell Regulator Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)

vacuum, respectively, to the fitting. Two voltmeters indicate input line voltages, and a DC ammeter indicates current drawn by the mockup bench.

Power Supply: 115 volts, AC, 400 cycles per second, single phase; 28 volts, DC.
AC Voltmeter Range: 0 to 150 volts.
DC Voltmeter Range: 0 to 50 volts.
DC Ammeter Range: 0 to 25 amperes.

MANUFACTURERS' OR CONTRACTORS' DATA:

Vendor: Minneapolis-Honeywell Regulator Company, Aeronautical Division, 2600 Ridway Road, Minneapolis 13, Minnesota.

Contractor: Douglas Aircraft Company, Inc., Long Beach 1, California; Contract Nos. AF 33(600)16314, AF 33(600)25669, and AF 33(600)28368.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 33D3-9-7-4 (Instructions and Parts Breakdown).

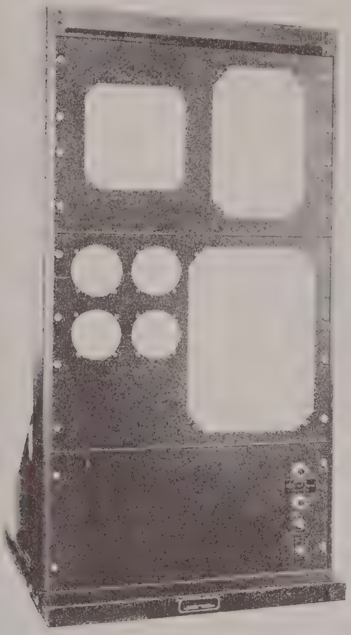
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Bench, Flyaway, MH-11C2 Autopilot (Minneapolis-Honeywell UG 198A-1)	Aluminum and Wood	7CAC-112283	34-1/4	40-1/4	34-1/4	

PANEL, SYSTEM TEST
Part No. T-101100
(Sperry Gyroscope Company)



FUNCTIONAL DESCRIPTION:

A depot level mounting and switching panel which consists of two racks for mounting units of the A-1A and ME-5 Computers. One of the racks (Rack "A") is used for mounting primary control, ballistics control, pilot's data indicator, time-to-go indicator, true airspeed indicator, line-of-sight control, and slaved gyro magnetic compass indicator. The other (Rack "B") is used for mounting the true heading transmitter and the navigation control. The panel is also used in conjunction with testing systems on various bombing navigational systems.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: Circuitry of the panel consists of switches, indicator lamps, resistors, and terminals. Units to be tested are mounted through special openings and interconnections made by means of cables and terminals. Tests are completed by various connections and switching arrangements.

Power Supply: Power requirements are met by the unit under test.

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CAC-619993		
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.3.4	
	- Electronics Test Equipment -		Sperry T-101100

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A.

PANEL, SYSTEM TEST
Part No. T-101100
(Sperry Gyroscope Company)

MANUFACTURERS' OR CONTRACTORS' DATA:

Sperry Gyroscope Company, Division of the Sperry-Rand Company, Great Neck, Long Island, New York.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 33D5-5-69-1 (Operation and Service Instructions).
TO 33D5-5-69-4 (Illustrated Parts Breakdown).

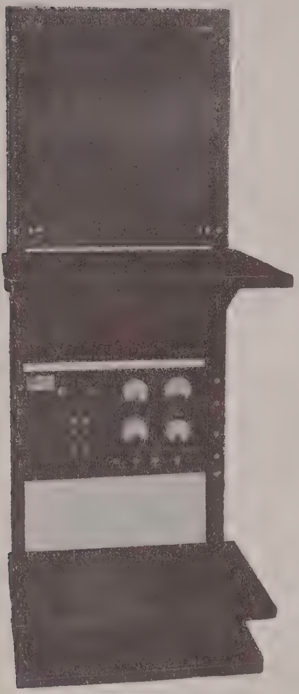
SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
1	Panel, System Test Sperry T-101100 Rack "A" Rack "B"	13.9 13.9	42 42	22 22	26 26	73.7 73.7

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Panel, System Test Sperry T-101100 (Including:)	Metal	7CAC-619993				
1	Rack "A"			38-3/4	20	18-3/8	40
1	Rack "B"			38-3/4	20	18-3/8	40

RACK, JUNCTION BOX
Part No. T-101103
(Sperry Gyroscope Company)



FUNCTIONAL DESCRIPTION:

The junction box rack consists of two mounting racks each with a control panel. One rack is designed to hold the stabilization amplifier or electronic control stabilization amplifier and the A-1 Power Supply. The other rack is designed to hold the computer or electronic control amplifier and the A-1 Power Supply. The junction box rack is used in conjunction with a depot raceway system for testing types K-1A, K-2A, K-3A, K-4A, MA-6A, and MA-7A Bombing Navigational Systems.

RELATIONSHIP TO OTHER EQUIPMENT:

ELECTROMECHANICAL DESCRIPTION:

Circuit Information: Each panel controls the power distribution to the amplifier unit under test. Four meters are mounted on each panel. A voltmeter indicates the amount of voltage being applied to the 175-volt circuits of the amplifier rack. Another voltmeter indicates the amount of voltage being applied to the 300-volt circuits of the amplifier rack. An ammeter indicates the amount of current flow-

(Continued)

	AIR FORCE	NAVY	ARMY
TYPE CLASS.			
STOCK NOS.	7CSG-T-101103		
PROCUREM'T INFO.:			
PROCUREM'T COG.:		DESIGN COG.: Commercial	
F.I.I.N.:		FUNCTIONAL CLASS. NO.: 10.3.4	
	- Electronics Test Equipment -	Sperry No. T-101103	

This project was supported by the USAF on Contract AF 33(600)28276 and monitored by WADC, ARDC - Carl L. Frederick, Bethesda, Md. - Multilithed in U. S. A

RACK, JUNCTION BOX
Part No. T-101103
(Sperry Gyroscope Company)

ELECTROMECHANICAL DESCRIPTION: (Continued)

ing in the 300-volt circuits and a milliammeter indicates the amount of current flowing in the 175-volt circuits of the amplifier rack. All circuits are protected by fuses or circuit breakers.

A toggle switch controls the 175 volts, DC, and another toggle switch controls the 300 volts, DC, to the amplifier rack under test. A 300-volt DC "bleeder" switch inserts a dummy load into the circuit.

Power Supply: 175 volts, DC; 27 volts, DC; 300 volts, DC; 115 volts, DC, 400 cycle (unregulated); 115 volts, AC, 400 cycle (regulated).

MANUFACTURERS' OR CONTRACTORS' DATA:

Sperry Gyroscope Company, Division of the Sperry-Rand Corporation, Great Neck, Long Island, New York; Contract No. AF 33(038)14787.

TUBE COMPLEMENT:

None.

REFERENCE DATA AND LITERATURE:

TO 33D5-5-74-1 (Operation and Service Instructions).
TO 33D5-5-74-4 (Parts Breakdown).

SHIPPING DATA:

No. of Boxes	Contents & Identification	Volume (Cu. Ft.)	Overall Dimensions (inches)			Weight Packed (Lbs.)
			H	W	D	
1	Rack, Junction Box (Sperry T-101103)	31 (each)	80	26	26	268

EQUIPMENT SUPPLIED:

Quant. Per Eq'pt	Name and Nomenclature	Case Mat'l	Stock Numbers (USAF) (Navy) (Army)	Overall Dimensions (inches)			Weight (Lbs.)
				H	W	D	
1	Rack, Junction Box (Sperry T-101103)	Metal	7CSG-T-101103	76	22-1/4	27-1/2	100